

United States
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

- ☒ **Annual Report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**
for the fiscal year ended June 30, 2022
- ☐ **Transition Report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**
for the transition period from _____ to _____ .

Commission File Number: 001-39375

II-VI INCORPORATED

(Exact name of registrant as specified in its charter)

Pennsylvania
(State or other jurisdiction of
incorporation or organization)
375 Saxonburg Blvd.
Saxonburg, PA
(Address of principal executive offices)

25-1214948
(I.R.S. Employer
Identification No.)

16056
(Zip code)

Registrant's telephone number, including area code: **724-352-4455**

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, no par value	IIVI	Nasdaq Global Select Market
Series A Mandatory Convertible Preferred Stock, no par value	IIVIP	Nasdaq Global Select Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes ☐ No ☒

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐
Indicate by check mark whether the registrant has submitted electronically, every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act:

Large Accelerated Filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes ☐ No ☒

Aggregate market value of outstanding common stock, no par value, held by non-affiliates of the Registrant at December 31, 2021, was approximately \$7,194,944,557 based on the closing sale price reported on the Nasdaq Global Select Market. For purposes of this calculation only, directors and executive officers of the Registrant and their spouses are deemed to be affiliates of the Registrant.

Number of outstanding shares of common stock, no par value, at August 24, 2022, was 130,874,428.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement, which will be issued in connection with the 2022 Annual Meeting of Shareholders of II-VI Incorporated, are incorporated by reference into Part III of this Annual Report on Form 10-K.

Forward-Looking Statements

This Annual Report on Form 10-K (including certain information incorporated herein by reference) contains forward-looking statements made pursuant to Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 (the "PSLRA"). The statements in this Annual Report on Form 10-K that are not purely historical are forward-looking statements, including, without limitation, statements regarding our expectations, assumptions, beliefs, intentions or strategies regarding the future. In some cases, these forward-looking statements can be identified by terminology such as, "may," "will," "should," "expects," "plans," "anticipates," "believes," "intends," "estimates," "predicts," "projects," "potential," or "continue" or the negative of these terms or other comparable terminology. Forward-looking statements address, among other things, our assumptions, our expectations, our assessments of the size and growth rates of our markets, our growth strategies, our efforts to increase bookings, sales and revenues, projections of our future profitability, cash generation, success of our research, development and engineering investments, results of operations, capital expenditures, our financial condition, our ability to integrate acquired businesses or other "forward-looking" information and include statements about revenues, costs, investments, earnings, margins, or our projections, actions, plans or strategies.

The forward-looking statements in this Annual Report on Form 10-K involve risks and uncertainties, which could cause actual results, performance or trends to differ materially from those expressed in the forward-looking statements herein or in previous disclosures. We believe that all forward-looking statements made by us have a reasonable basis, but there can be no assurance that these expectations, beliefs or projections will actually occur or prove to be correct, at least on the timetable of our expectations. Actual results could differ materially. We claim the protection of the safe harbor for forward-looking statements contained in the PSLRA for our forward-looking statements.

The risk factors described in more detail herein under Item 1A. "Risk Factors" and summarized below under "Risk Factor Summary," among others, in some cases have affected and in the future could affect our financial performance and actual results, and could cause actual results for fiscal 2023 and beyond to differ materially from those expressed or implied in any forward-looking statements included in this Annual Report on Form 10-K or otherwise made by our management.

All such factors, as well as factors described or referred to in other filings we make with the Securities and Exchange Commission (the "SEC") from time to time, should be considered in evaluating our business and prospects. Many of these factors are beyond our reasonable control. In addition, we operate in a highly competitive and rapidly changing environment, and, therefore, new risk factors can arise and be present without market participants like us knowing until a substantial amount of time has passed. It is not possible for management to predict all such risk factors, assess the impact of all such risk factors on our business or estimate the extent to which any individual risk factor, or combination of risk factors, may impact our business. It is also not possible for management to mitigate all such risks, and therefore any such risk factor may cause results to differ materially from those contained in any forward-looking statement. The forward-looking statements included in this Annual Report on Form 10-K speak only as of the date of this Annual Report on Form 10-K. We do not assume any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or developments, or otherwise, except as may be required by the securities laws. We caution you not to rely on them unduly.

II-VI Incorporated does communicate with securities analysts from time to time and those communications are conducted in accordance with applicable securities laws. Investors should not assume that II-VI Incorporated agrees with any statement or report issued by any analyst, irrespective of the content of the statement or report.

Risk Factor Summary

The following is a summary of the material risks and uncertainties that could cause our business, financial condition or operating results to be adversely impacted. We encourage you to carefully review the full risk factors contained in Item 1A. "Risk Factors" herein in their entirety for additional information regarding these risks and uncertainties.

Risks Relating to Our Business and Our Industry

- Investments in future markets of potential significant growth may not result in the expected return.
- Our competitive position depends on our ability to develop new products and processes.

- Our products may contain defects that are not detected until deployed, which could increase our costs, reduce our revenues, cause us to lose key customers, or expose us to litigation related to our products.
- Our competitive position may still require significant investments.
- We may be unable to successfully implement our acquisitions strategy or integrate acquired companies and personnel with existing operations.
- Although we expect that our acquisitions will result in cost savings, synergies, and other benefits, we may not realize those benefits, or be able to retain those benefits even if realized.
- Our future success depends on continued international sales, and our global operations are complex and present multiple challenges to manage.
- We may fail to accurately estimate the size and growth of our markets and our customers' demands.
- We may encounter increased competition, and we may fail to accurately estimate our competitors' or our customers' willingness and capability to backward integrate into our competencies and thereby displace us.
- A significant portion of our business may be subject to cyclical market factors.
- The long sales cycles for many of our products may cause us to incur significant expenses.
- We have entered into supply agreements that commit us to supply products on specified terms.
- We depend on highly complex manufacturing processes that require feeder materials, components, and products from limited sources of supply.
- Delays in transportation of products and possible shortages of critical raw materials, parts, equipment and other resources may adversely affect our results of operations.
- We participate in the microelectronics market, which requires significant research and development expenses to develop and maintain products and a failure to achieve market acceptance for our products could have a significant negative impact on our business and results of operations.
- There are risks associated with our participation in the flat panel display market, including as a result of there being a relatively limited number of end customer manufacturers.
- Increases in commodity prices may adversely affect our results of operations and financial condition.
- A widespread health crisis could materially and adversely affect our business, financial condition, and results of operations.
- Global economic downturns may adversely affect our business, operating results, and financial condition.
- Foreign currency risk may negatively affect our revenues, cost of sales, and operating margins, and could result in foreign exchange losses.
- We are subject to complex and rapidly changing import and export regulations which could limit our sales and decrease our profitability and we may be subject to legal and regulatory consequences if we do not comply with applicable export control laws and regulations.
- Changes in trade policies, such as increased import duties, could increase the costs of goods imported into the United States or China.
- Our current credit agreement and any other credit or similar agreements into which we may enter in the future may restrict our operations, particularly our ability to respond to changes or to take certain actions regarding our business.
- Any inability to access financial markets from time to time to raise required capital, finance our working capital requirements or our acquisition strategies, or otherwise support our liquidity needs could negatively impact our ability to finance our operations, meet certain obligations, or implement our growth strategy.
- There are limitations on the protection of our intellectual property, and we may from time to time be involved in costly intellectual property litigation or indemnification.
- Our global operations are subject to complex legal and regulatory requirements.
- We may face particular data privacy and security and data protection risks due to laws and regulations regulating the protection or security of personal and other sensitive data.
- Data breach incidents and breakdowns of information and communication technologies could disrupt our operations and impact our financial results.
- We use and generate potentially hazardous substances that are subject to stringent environmental regulations.
- We have a substantial amount of debt, which could adversely affect our business, financial condition, or results of operations and prevent us from fulfilling our debt-related obligations.
- The agreements that govern our senior credit facilities and our 2029 Notes contain various covenants that impose restrictions on our business, which may affect our ability to operate our businesses.
- Unfavorable changes in tax rates, tax liabilities, or tax accounting rules could negatively affect future results.
- Natural disasters or other global or regional catastrophic events could disrupt our operations, give rise to substantial environmental hazards, and adversely affect our results.
- Russia's invasion of Ukraine and the resulting conflict has had a negative impact on our business, may continue to negatively impact our business and may have a negative impact on our results of operations.
- Our success requires us to attract, retain, and develop key personnel and maintain good relations with our employees.
- We contract with a number of large end-user service providers and product companies that have considerable bargaining power, which may require us to agree to terms and conditions that could have an adverse effect on our business or ability to recognize revenues.
- We may be adversely affected by climate change regulations.

- Some of our business units depend from time to time on large purchases from a few significant customers, and any loss, cancellation, reduction, or delay in purchases by these customers could harm the longevity of the business.
- Our operations may be adversely affected if we are unable to manufacture certain products in our manufacturing facilities.
- Failure to accurately forecast our revenues could result in additional charges for obsolete or excess inventories or noncancellable purchase commitments.
- Our markets are unpredictable and characterized by rapid technological changes and evolving standards demanding a significant investment in research and development, and, if we fail to address changing market conditions, our business and operating results will be harmed.
- If our goodwill or intangible assets become impaired, we may be required to record a significant charge to earnings.
- If we fail to maintain an effective system of disclosure controls and internal control over financial reporting, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.

Risks Relating to Our Capital Stock

- The trading prices for our securities have been volatile in the past and may be volatile in the future.
- Provisions in our Amended and Restated Articles of Incorporation and Amended and Restated Bylaws and the Pennsylvania Business Corporation Law may delay or prevent our acquisition by a third party, which could also reduce the market price of our capital stock.
- We do not currently intend to pay dividends on our common stock, holders will benefit from an investment in our common stock only if it appreciates in value and by the intended anti-dilution actions of our share-buyback program.
- Our ability to declare and pay dividends on our capital stock may be limited, including by the terms of our existing Credit Agreement.
- Trading in preferred stock that we have issued may adversely affect the market price of our common stock.
- Our common stock is subordinate to our existing and future indebtedness; the Mandatory Convertible Preferred Stock and Series B Preferred Stock; and any other preferred stock we may issue in the future. Our Mandatory Convertible Preferred Stock and Series B Preferred Stock rank junior to all of our and our subsidiaries' consolidated liabilities.
- Our board of directors can issue, without approval of the holders of our common stock, preferred stock with voting and conversion rights that could adversely affect the voting power of the holders of our common stock, the rights of holders of shares of our capital stock, or the market price of our capital stock.
- The redemption rights of the holders of Series B Preferred Stock may result in the use of our cash in such a way that could adversely affect our business, financial condition or results of operations.
- Holders of our Series B Preferred Stock can exercise significant control over us, which could limit the ability of holders of our other capital stock to influence the outcome of key transactions, including a change of control.
- Reports published by securities or industry analysts, freelance bloggers and credit rating agencies, including projections in those reports that exceed our actual results, could adversely affect our share price and trading volume.
- Regulatory actions may adversely affect the trading price and liquidity of the Mandatory Convertible Preferred Stock.
- Holders of Mandatory Convertible Preferred Stock have no voting rights with respect to the Mandatory Convertible Preferred Stock, except under limited circumstances.
- We depend on our subsidiaries for cash to fund our operations and expenses, including future dividend payments with respect to our outstanding preferred stock.

PART I

Item 1. BUSINESS

Definitions

II-VI Incorporated (“II-VI,” the “Company,” “we,” “us,” or “our”) was incorporated in Pennsylvania in 1971. Our headquarters are located at 375 Saxonburg Boulevard, Saxonburg, Pennsylvania 16056, USA. Our telephone number is +1-724-352-4455. Reference to “II-VI,” the “Company,” “we,” “us,” or “our” in this Annual Report on Form 10-K, unless the context requires otherwise, refers to II-VI Incorporated and its wholly owned subsidiaries. The Company’s name is pronounced “Two Six Incorporated.” The name II-VI refers to Groups II and VI of the periodic table of elements from which II-VI originally designed and produced infrared optics for high-power CO₂ lasers used in materials processing. The majority of our revenues are attributable to the sale of engineered materials and optoelectronic components, devices, and subsystems for the optical communications, industrial, aerospace and defense, and consumer electronics markets. Reference to “fiscal,” “fiscal year,” or “FY” means our fiscal year ended June 30 for the year referenced.

As of June 30, 2022, the Company’s operations were organized into two reporting segments: (i) Photonic Solutions and (ii) Compound Semiconductors. See below for a more detailed description of each of these segments. On July 1, 2022 the Company completed the previously announced acquisition of Coherent, Inc. (“Coherent”), pursuant to the Agreement and Plan of Merger, dated March 25, 2021 (the “Merger Agreement”), by and among the Company, Coherent and Watson Merger Sub Inc. (the “Merger”). In connection with the Merger, effective July 1, 2022, the Company realigned its organizational structure into three reporting segments for the purpose of making operational decisions and assessing financial performance: (i) Materials, which previously was referred to as our Compound Semiconductors segment (ii) Networking, which previously was referred to as our Photonic Solutions segment, and (iii) Lasers. The Company will report financial information for these new reporting segments in fiscal 2023. This change in reporting is to occur beginning with periods commencing July 1, 2022.

The following defined terms are used in this Annual Report on Form 10-K: augmented reality (AR); bismuth telluride (Bi₂Te₃); cadmium telluride (CdTe); carbon dioxide (CO₂); Centers for Disease Control (CDC); chemical vapor deposition (CVD) of materials including diamond; datacenter interconnect (DCI); dense wavelength division multiplexing (DWDM); digital signal processors (DSPs); diversity, equity, and inclusion (DEI); extreme-ultraviolet (EUV) lithography; fifth-generation (5G) wireless; fourth-generation (4G) wireless; gallium arsenide (GaAs); gallium nitride (GaN); Geostationary Operational Environment Satellite Program (GOES); gigabit Ethernet (GbE); gigabit per second (Gbps); high-definition multimedia interface (HDMI); high-electron-mobility transistor (HEMT); indium phosphide (InP); infrared (IR); integrated circuit (IC); intellectual property (IP); kilowatt (kW); light detection and ranging (LiDAR); liquid crystal (LC); liquid crystal on silicon (LCOS); metal-oxide-semiconductor field-effect transistor (MOSFET); millimeters (mm); nanometers (nm); near-infrared (NIR); optical channel monitor (OCM); optoelectronic chip hybrid integration platform (OCHIP); original equipment manufacturer (OEM); optical time-domain reflectometer (OTDR); polymerase chain reaction (PCR); radio frequency (RF); reconfigurable optical add/drop multiplexer (ROADM); research and development (R&D); research, development, and engineering (RD&E); silicon carbide (SiC); terabit per second (Tbps); three-dimensional (3D); transimpedance amplifier (TIA); ultraviolet (UV); vertical-cavity surface-emitting laser (VCSEL); virtual reality (VR); wavelength division multiplexing (WDM); wavelength selective switching (WSS); zinc selenide (ZnSe); and zinc sulfide (ZnS).

General Description of Business

We develop, manufacture, and market engineered materials, optoelectronic components, and devices for use in optical communications, industrial, aerospace and defense, consumer electronics, semiconductor capital equipment, life sciences, and automotive applications end markets. We use advanced engineered materials growth technologies and proprietary high-precision fabrication, microassembly, optical thin-film coating, and electronic integration to manufacture complex optoelectronic devices and modules. Our products are deployed in a variety of applications, including (i) optical, data, and wireless communications products; (ii) laser cutting, welding, marking, and other materials processing operations; (iii) 3D sensing consumer applications; (iv) aerospace and defense applications including intelligence, surveillance, and reconnaissance; (v) semiconductor processing tools; and (vi) thermoelectric cooling and power-generation solutions.

Through RD&E investments and its strategic acquisitions, II-VI has expanded its portfolio of materials and product platforms. We believe that the materials we grow and fabricate are differentiated by one or a combination of unique optical, electrical, magnetic, thermal, and mechanical properties. II-VI’s optics are shaped by precision surfacing techniques to meet the most stringent requirements for flat or curved geometries, functionalized with smooth or structured surfaces, or with patterned metallization. Proprietary processes developed at our global optical coating centers differentiate our products’ durability against high-energy lasers and extreme operating environments. Optical coatings also provide the desired spectral characteristics, ranging from the ultraviolet to the far-infrared. II-VI leverages these capabilities to deliver miniature to large-scale precision optical assemblies, including those in combination with thermal-management components, integrated electronics, and software.

II-VI also offers a broad portfolio of compound semiconductor lasers that are used in a variety of applications in our end markets. These lasers enable optical signal transmission, reception, and amplification in terrestrial and submarine communications networks; high-bit-rate server connectivity between and within datacenters; optical communications network monitoring; materials processing; and fast and accurate measurements in biomedical instruments and consumer electronics.

II-VI continues to improve its operational capabilities, develop next-generation products, and invest in new technology platforms to drive growth in the short term and the long term. With our strategic focus on fast-growing and sustainable markets, II-VI pursues its mission of enabling the world to be safer, healthier, closer, and more efficient, and strives to attain its vision of a world transformed through innovations vital to a better life today and the sustainability of future generations.

Acquisition and Background of Coherent, Inc.

Coherent, one of the world's leading providers of laser solutions and optics for microelectronics, life sciences, industrial manufacturing, scientific and aerospace and defense markets, was acquired by II-VI on July 1, 2022. In fiscal year 2023, Coherent's operations will be included in the combined company, to be rebranded Coherent Corp., as the Lasers Segment. Except as otherwise indicated in this Annual Report on Form 10-K, information about II-VI as of June 30, 2022 or any earlier date, or for any period ended June 30, 2022 or any earlier date, does not include any financial, operational or other information regarding Coherent.

Coherent delivers systems to the world's leading brands, innovators, and researchers, all backed with a global service and support network. Since inception in 1966, Coherent has grown through internal expansion and through strategic acquisitions of complementary businesses, technologies, intellectual property, manufacturing processes, and product offerings. Coherent serves important end markets like microelectronics, precision manufacturing, and instrumentation, as well as applications in aerospace and defense.

The word "laser" is an acronym for "light amplification by stimulated emission of radiation." A laser emits an intense coherent beam of light with some unique and highly useful properties. Most importantly, a laser is orders of magnitude brighter than any lamp. As a result of its coherence, the beam can be focused to a very small and intense spot, useful for applications requiring very high power densities including welding and other materials processing procedures. The laser's high spatial resolution is also useful for microscopic imaging and inspection applications. Laser light can be monochromatic—all of the beam energy is confined to a narrow wavelength band. Lasers can produce the lasing action in the form of a gas, liquid, semiconductor, solid state crystal or fiber. Lasers can also be classified by their output wavelength: ultraviolet, visible, infrared or wavelength tunable. Coherent manufactures all of these laser types, in various options such as continuous wave, pulse duration, output power, beam dimensions, etc. Each application has its own specific requirements in terms of laser performance.

Coherent's key laser applications include: semiconductor wafer inspection; manufacturing of advanced printed circuit boards; flat panel display manufacturing; solar cell production; medical and bio-instrumentation; materials processing; metal cutting and welding; industrial process and quality control; marking; imaging and printing; graphic arts and display; and research and development. For example, UV lasers are enabling the continuous move towards miniaturization, which drives innovation and growth in many markets. In addition, the advent of industrial grade ultrafast lasers continues to open up new applications for laser processing.

Information Regarding Market Segments and Foreign Operations

Financial data regarding our revenues, results of operations, industry segments, and international sales for the three years ended June 30, 2022, are set forth in the Consolidated Statements of Earnings (Loss) and in Note 14. Segment and Geographic Reporting to our Consolidated Financial Statements, which are included in Item 8 of this Annual Report on Form 10-K and are incorporated herein by reference. We also discuss certain Risk Factors set forth in Item 1A – Risk Factors of this Annual Report on Form 10-K related to our foreign operations, which are incorporated herein by reference.

Bookings and Backlog

We define our bookings as customer orders received that are expected to be converted to revenues over the next 12 months. The Company reports as bookings only those orders that are expected to be converted into revenues within 12 months from the end of the reporting period. Bookings are adjusted if changes in customer demands or production schedules cause the expected time of a delivery to extend beyond 12 months. For the fiscal year ended June 30, 2022, our bookings were approximately \$4.3 billion, compared with bookings of approximately \$3.3 billion for the fiscal year ended June 30, 2021.

We define our backlog as bookings that have not been converted to revenues by the end of the reporting period. As of June 30, 2022, our backlog was approximately \$2.3 billion, compared with approximately \$1.3 billion as of June 30, 2021.

Global Operations

II-VI is headquartered in Saxonburg, Pennsylvania, USA, with RD&E, manufacturing, and sales facilities worldwide. Our U.S. production and RD&E operations are located in Arizona, California, Colorado, Connecticut, Delaware, Florida, Illinois, Massachusetts, Michigan, Mississippi, New Jersey, New York, Ohio, Oregon, Pennsylvania, and Texas, and our non-U.S. production and RD&E operations are based in Australia, China, Germany, India, Malaysia, the Philippines, Singapore, Sweden, Switzerland, Thailand, the United Kingdom, and Vietnam. We also utilize contract manufacturers and strategic suppliers. In addition to sales offices co-located at most of our manufacturing sites, we have sales and marketing subsidiaries in Belgium, Canada, China, Germany, Hong Kong, Italy, Japan, South Korea, Switzerland, Taiwan, and the United Kingdom, and, following the Coherent acquisition, in France, Israel, the Netherlands, and Spain.

In addition, Coherent's products are manufactured at sites in California, Oregon, Michigan, New Jersey, and Connecticut in the United States; Germany, Scotland, Finland, Sweden, Switzerland, and Spain in Europe; and South Korea, China, Singapore, and Malaysia in Asia. In addition, Coherent also uses contract manufacturers in southeast Asia, Eastern Europe and the United States for the production of certain assemblies and turnkey solutions.

Human Capital

Our mission is "Enabling the world to be safer, healthier, closer, and more efficient."

Our vision is "A world transformed through innovations vital to a better life today and the sustainability of future generations."

Our core values are: Integrity, Collaboration, Accountability, Respect, and Enthusiasm (I CARE). Our values define who we are and serve as a guide in how we engage with each other, our customers, our suppliers, our investors, and our environment. They serve as a model for how we grow our company in an ethical, scalable, and sustainable manner.

Our workplace is defined by our people. It enables them to show up as their "best self" to work every day. This includes creating an inclusive environment in which every individual is considered a valued and valuable member of the team. We listen to the voice of the employee through focus groups, personal interviews, engagement as part of our open-door policy, and through engagement surveys, among other methods. This rich feedback allows us to reflect and adjust our employee-focused initiatives across the globe to create a culture that recognizes their contributions and values their opinions. As a result, our human capital strategies are core to the long-term sustainability and success of the Company.

As of June 30, 2022, the Company employed approximately 24,000 employees worldwide.

	Number of employees	Percent of total
Direct production	16,293	69%
Research, development, engineering, sales and marketing	4,379	18%
General administration	2,986	13%
Total:	23,658	100%

We believe that our efforts in managing our workforce have been effective, as evidenced by a strong culture and a good relationship between the Company and our employees.

- *Our People.* Our people are critical to our continued success. We provide a workplace that develops, supports, and motivates our employees. We partner with Gallup to implement their Q12 Employee Engagement Survey. The survey questions and Gallup's resources help us measure our progress toward creating a stronger, more engaged workforce. Based on the results, our employee teams then collaborate on action plans to improve in targeted areas. Our most recent employee engagement survey (2021) saw 94% participation from our global workforce, and the results showed that overall engagement increased by 10% from our original survey. We plan to conduct the survey again in calendar year 2023 to continue to measure and enhance employee engagement company wide.

- *Occupational Health and Safety.* It is our highest priority to keep our employees, customers, and suppliers safe, as the health and safety of our workforce is paramount to the success of our business. We provide our employees upfront and ongoing safety training to ensure that safety policies and procedures are effectively communicated and implemented. We have experienced employees on-site at each of our manufacturing locations who are tasked with environmental, health, and personal safety education and compliance. The safety calculation recognized by the Occupational Safety and Health Administration, the Total Recordable Incident Rate (“TRIR”), is closely monitored throughout the Company. As of June 30, 2022, our TRIR was 0.23, which remained static year-over-year as compared to FY21. We customize our policies to the local requirements and circumstances of each plant.
- *COVID-19.* Our top priority during the ongoing COVID-19 pandemic has been and continues to be protecting the health and safety of our employees and their families, our customers, suppliers, and our communities. Our on-site work environments were changed to accommodate best-in-class protocols. The commitment to this effort is evidenced by the extensive planning and numerous actions we swiftly took to respond to the pandemic, including the development and implementation of a Pandemic Response Team and Pandemic Response Guide, a work-from-home program, health check protocols, temperature screenings, and periodic COVID-19 testing where permitted and deemed appropriate for all employees working on-site. Additionally, new process workflows were initiated to ensure reduced contact for employees working on-site, contact tracing processes and protocols were established, quarantining and testing protocols for exposure and positive tests were implemented, travel guidelines and protocols were created to ensure that employees who must travel for work can do so safely, and phased return-to-work plans and approval processes were formed to enable non-manufacturing employees to return to the office when permitted by local government regulations and deemed appropriate by II-VI leadership. We hired an infectious disease expert who specializes in COVID-19 to offer guidance to our Pandemic Response Team, managers, and site leaders. We have begun the transition back to in-person work for offices on a site-by-site basis per location where deemed safe and responsible by the CDC and safeguards continue to evolve based on the local risk level and feedback from our medical consultants.
- *Talent Acquisition, Development, and Training.* Hiring talented individuals and continuing to develop them are critical to our operations, and we are focused on creating experiences and programs that foster growth and performance. We have a robust succession-planning process that identifies internal candidates for development. We provide all employees the chance to learn and develop critical skills, and we strive to attract, motivate, and retain high-quality talent. We encourage all employees to broaden their knowledge. For example, to foster our culture of innovation, we host monthly Technology Spotlight Seminars to highlight some of the many significant technical advances and competencies within II-VI. These seminars cover a broad spectrum of platforms and products, with the primary objectives of fostering innovation within the company and technical community; cross-fertilizing technology and sparking new ideas for cross-business collaborations; and enhancing the visibility of II-VI’s technical capabilities, platforms, and recent advances. Tuition reimbursement and funding for growth and development is built into the annual budget to ensure that II-VI has the skilled workforce we need. Our global internship programs welcome a new talent pipeline. In FY22, II-VI pledged \$1,000,000 to fund STEM educational and research programs in 2022.
- *Total Rewards.* Our “One II-VI” approach to total rewards provides a competitive total compensation package that attracts, motivates, and retains high-quality talent; matches total rewards of competitors with which we compete for talent; increases transparency of rewards programs, company and segment metrics, and measurement of achievements in relation to challenging objectives; balances fixed costs (benefits and base pay) and variable costs (bonus and equity), with a substantial portion of total direct compensation tied to performance; pays for performance – base, bonus, and equity reflect both company and individual performance; and aligns with the interests of our shareholders. Globally, all non-sales employees participate in a variable incentive program measured on the operating earnings of their business segment. Similarly, sales employees are incentivized on revenue and profit-after-tax attainment. Select employees are eligible to receive equity-based awards, to align employee and shareholder interests. In addition to offering competitive and fair compensation, we also offer a compelling suite of benefits, including comprehensive health benefits to all of our employees globally.

- **Diversity and Inclusion.** II-VI supports fundamental human rights – values inherent to all human beings. We expect all leaders and employees to treat each other with dignity, fairness, and respect. We are consciously expanding the diversity of our workforce with a focus on underrepresented groups in leadership and technical positions, creating growth and development opportunities for our employees, embracing different perspectives, and fostering an inclusive work environment. We have begun to incorporate inclusive leadership training topics into our leadership development programs to ensure that inclusive leadership practices are embedded into our culture. In FY22, we introduced “Building a Culture of Inclusion” into our global Front-Line Leader Program. The Company also formed a Global Advisory Council comprising senior leaders across the organization responsible for providing oversight on our DEI efforts. The program’s executive sponsors include the CEO’s direct reports and a Corporate Board Member. The Council is currently working on developing the program’s strategic pillars and tying DEI objectives to the business strategy. We plan to have regional DEI strategies in place for each of our global locations. With the launch of our DEI program, Chair and CEO Chuck Mattera took a stand against racism in signing the CEO Action for Diversity & Inclusion Pledge, joining other CEOs dedicated to advancing diversity and inclusion in the workplace. The pledge includes a commitment to engage the board of directors when developing and evaluating DEI strategies, cultivating an environment that supports open dialogue on complex and often difficult conversations around DEI, implementing and expanding unconscious bias education and training, and sharing best practices in the area of DEI programs and initiatives.

Globally, approximately 49% of the workforce is female, with 11,519 females and 12,139 males as of June 30, 2022. In the II-VI’s Senior Leadership Team (“SLT”), which consists of senior directors and above, there are 21 females and 196 males. The SLT meets quarterly to discuss strategy, business trends, company operations, financials, and people programs. Our global footprint is diverse, with approximately 18,600 employees in the Asia-Pacific region, 1,300 in Europe, and 3,800 in the Americas.

Manufacturing Processes

Our success in developing and manufacturing many of our products depends on our ability to manufacture and tailor the optical and physical properties of technically challenging materials and components. The ability to produce, process, and refine these complex materials, and to control their quality and in-process yields, is an expertise of the Company that is critical to the performance of our customers’ subsystems and systems. In the markets we serve, there is a limited number of high-quality suppliers of many of the components we manufacture. Aside from datacenter transceivers, there are very few industry-standard products.

Our network of worldwide manufacturing sites allows us to manufacture our products in regions that provide cost-effective and risk-management advantages. We employ numerous advanced manufacturing technologies and systems at our manufacturing facilities. These include metal-organic chemical vapor deposition and molecular beam epitaxy reactors, automated computer numeric control optical fabrication, high-throughput thin-film coaters, nanoprecision metrology, and custom-engineered automated furnace controls for crystal growth processes. Manufacturing products for use across the electromagnetic spectrum requires the capability to repeatedly manufacture products with high yields to atomic tolerances. II-VI continuously updates its comprehensive quality management systems that feature manufacturing quality best practices. II-VI is committed to delivering products within specification, on time, and with high quality, with a goal of fully satisfying customers and continually improving.

We continue to focus our efforts to convert locations to renewable energy. During the past two fiscal years, we have converted 40 of our sites to renewable-electricity contracts. In addition, II-VI participates in Apple’s Supplier Clean Energy Program, and all of our Apple production facilities are powered with 100% renewable energy.

Additionally, our Fremont, California, and Dallas, Texas, facilities are multiyear award recipients for continued compliance with local wastewater treatment programs. Additional information can be found on the Environmental, Social, and Governance (ESG) section of our website at www.ii-vi.com. The website address is intended to be an inactive textual reference only. None of the information on, or accessible through, II-VI’s website is part of this Annual Report on Form 10-K or is incorporated by reference herein.

Sources of Supply

In our production processes, we use numerous optical, electrical, and mechanical parts that are sourced from third-party suppliers. These include integrated circuits, mechanical housings, and optical components, and we commonly refer to them as raw materials.

The continued high quality of and access to these raw materials are critical to the stability and predictability of our manufacturing yields. We specify and test these raw materials at the onset of and throughout the production process. Additional research and capital investment are sometimes needed to better define future raw materials specifications. As a result of COVID-19, we have experienced some production delays due to shortages of raw materials, and we are driving the development of strategic second sources as part of our overall business continuity planning. We do occasionally experience problems associated with vendor-supplied raw materials not meeting contract specifications for quality or purity. Risks associated with reliance on third parties for the timely and reliable delivery of raw materials is discussed in greater detail in Item 1A. Risk Factors of this Annual Report on Form 10-K.

Business Units

The Company's organizational structure historically has been divided into two reporting segments for the purpose of making operational decisions and assessing financial performance: (i) Photonic Solutions and (ii) Compound Semiconductors. With the acquisition of Coherent on July 1, 2022 the Company added a third reporting segment "Lasers", which is comprised of nearly all of the business of Coherent. In addition, the Company renamed its existing two reporting segments from Photonics Solutions to Networking and from Compound Semiconductors to Materials. Beginning with fiscal year 2023, the Company is divided into three reporting segments: (i) Materials, (ii) Networking, and (iii) Lasers. The Company will report financial information for these new reporting segments in fiscal 2023.

The Photonic Solutions Segment leverages II-VI's compound semiconductor technology platforms and deep knowledge of end-user applications for our key end markets to deliver differentiated components and subsystems.

The Compound Semiconductors Segment is a market leader in engineered materials and optoelectronic devices such as those based on GaAs, InP, GaN, and SiC. We may from time to time reorganize parts of a given segment or corporate center to drive the focus of certain priorities.

II-VI's segments are organized by business unit at the group or division level. Each of these business units develops and markets products as described below.

Photonic Solutions	
Business Unit	Our Products
ROADM	<ul style="list-style-type: none"> Products and solutions that enable high-bit-rate interconnects for datacenters and communications service providers, datacenter interconnects, ROADM systems, and undersea fiber-optic transmission
Transceivers	<ul style="list-style-type: none"> Pluggable transceivers for Ethernet and Fibre Channel applications in cloud and enterprise datacenter applications High-speed optoelectronics and modules for optical communications in telecom networks, including for datacenter interconnects and for metro, regional, long-haul, and ultralong-haul networks
Advanced Optics	<ul style="list-style-type: none"> Fiber optics and precision optics used in projection displays; crystal materials and components for optical communications; high-power UV, visible, and NIR optics for industrial lasers; filters and assemblies for life sciences as well as for sensors, instrumentation, and semiconductor equipment

Compound Semiconductors	
Business Unit	Our Products
Engineered Materials & Laser Optics	<ul style="list-style-type: none"> • Laser optics and accessories for CO₂ lasers used in industrial, semiconductors, and life sciences applications • High-power fiber and direct-diode laser optics • Infrared thermal imaging optics and assemblies • Polycrystalline materials production including ZnSe, ZnS, and CVD diamond • Thermoelectric components, subassemblies, and systems for heating, cooling, temperature tuning, thermal cycling, and power generation in aerospace and defense, medical, industrial, automotive, consumer, telecommunications, and energy-production markets • Specialty refining, recycling, and materials-recovery services for high-purity rare metals such as selenium and tellurium, as well as related chemical products such as tellurium dioxide for optics, photovoltaics, semiconductors, thermoelectric coolers, metallurgy, agriculture, and industrial applications • Advanced ceramic and metal-matrix composite products for semiconductor capital equipment, flat-panel displays, industrial and optical equipment, and defense applications
Laser Devices & Systems	<ul style="list-style-type: none"> • High-power semiconductor lasers and laser bars enabling fiber and direct-diode lasers for industrial, defense, consumer, and printing applications • Laser heads and modules, Q-switched laser modules, high-power uncooled pump laser modules, laser solutions for superhard materials processing • Laser processing heads and beam delivery systems for laser materials processing with industrial lasers • High-speed VCSELs for optical communications • High-power pumps for amplifiers and optical communications • Precision optical assemblies, objectives, infrared optics, thin-film coatings, and optical materials • Optical solutions for critical and complex design, engineering, and production challenges in aerospace and defense • Semiconductor lasers and detectors for optical interconnects
New Ventures & Wide-Bandgap Electronics Technologies	<ul style="list-style-type: none"> • SiC and advanced semiconductor materials for high-frequency and high-power electronic device applications in defense, telecommunications, automotive, and industrial markets
Optoelectronic & RF Devices	<ul style="list-style-type: none"> • VCSELs for sensing, including 3D sensing in consumer electronics and automotive applications • GaAs-based RF electronic devices • Integrated circuits for transceivers for optical communications • III-V epitaxial wafers to enable higher-performance photonic and RF components for consumer, communications, network, and mobile applications • Semiconductors lasers and detectors for sensing applications
Aerospace & Defense	<ul style="list-style-type: none"> • Ultraviolet to long wavelength infrared materials and optics • High energy lasers and optics

Our Markets

Our market-focused businesses are currently organized by technologies and products. Our businesses address the following primary markets: optical and wireless communications, industrial, aerospace and defense, semiconductor capital equipment, life sciences, consumer electronics, and automotive. In connection with the acquisition of Coherent, effective July 1, 2022, the Company has reconfigured its primary markets. The combined company will serve the four markets of industrial, communications, electronics, and instrumentation. The Company will report financial information for these new markets in fiscal 2023. This change in reporting is to occur beginning with periods commencing July 1, 2022.

Communications Market

II-VI's optical communications and wireless products and technologies enable next-generation high-speed optical transmission systems, networks, and datacenter solutions necessary to meet the accelerating global bandwidth demand.

Demand for our products is largely driven by the continually growing need for additional network bandwidth created by the ongoing proliferation of data and video traffic from video conferencing for work, school, and leisure; video downloads and streaming; live TV; social networking; online gaming; file sharing; enterprise IP/internet traffic; cloud computing; and datacenter virtualization that must be handled by both wireline and wireless networks. This traffic increase reflects the recent shift to the work-from-home and study-from-home approach, which was driven by the COVID-19 pandemic but is expected to continue. Mobile traffic is increasing as a result of the proliferation of smartphones, tablet computers, and other mobile devices.

We are a global technology leader in optical communications, providing materials, subcomponents, components, modules, and subsystems to optical component and module manufacturers, networking equipment manufacturers, datacenter operators, and telecom service providers. We design products that meet the increasing demands for network bandwidth and data storage.

Our optical communications products can be divided into two main groups, optical transmission and optical transport. Our optical transmission products consist primarily of transmitters, receivers, transceivers, transponders, and active optical cables, which provide the fundamental optical-electrical, or optoelectronic, interface for interconnecting the electronic equipment used in networks. This equipment includes switches, routers, and servers used in wireline networks, as well as antennas and base stations used in wireless networks. These products rely on advanced components such as semiconductor lasers and photodetectors, in conjunction with integrated circuits and novel optoelectronic packaging to provide a cost-effective means for transmitting and receiving digital signals over fiber-optic cable at speeds ranging from less than 1 Gbps to more than 400 Gbps, over distances of less than 10 meters to more than 5,000 kilometers, using a wide range of network protocols and physical configurations.

Our optical transport products are at the core of both terrestrial and undersea optical networks. Our market-leading 980 nm pump lasers are the key enablers of our erbium-doped fiber amplifiers, which boost the power of optical signals in fiber-optic cables at intervals spanning 80 kilometers, typically, to allow high-speed signals to be transmitted over longer distances. Our latest generation of components for coherent transceivers is critical to a new generation of small-size, long-reach DWDM transmission modules operating from 100 Gbps to 1 Tbps and beyond.

Customers continue to rely on us for our industry-leading optical amplification and embedded monitoring solutions for their next-generation ROADM systems to compensate for inherent signal loss and to monitor signal integrity. Our proprietary OTDR modules allow systems to automatically detect and pinpoint issues along the transmission path in real time. Together with our OCM solutions, which monitor the optical power of the channels transmitted in a fiber-optic link, they enable real-time intelligence to perform preventive maintenance so as to preserve data transmission. In addition, we offer a portfolio of WSS products, which we also incorporate into ROADM line cards and subsystems.

Our proven experience in both transmission and transport allows us to effectively address the emerging DCI market. Our transceivers, submodules, pluggable amplifiers, and configurable line cards are able to meet the requirements of low power consumption, compactness, ease of installation and operation, and cost savings, which are often mandatory features in the DCI market.

The accelerating adoption of applications such as cloud computing is driving the rapid growth of datacenter buildouts. Our high-speed VCSELs enable transceivers for intra-datacenter communication. Our miniature WDM thin-film filter assemblies are used to increase the bandwidth within 100 GbE transceivers by combining wavelengths at the transmitter end and separating them out at the receiver end.

In the mobile wireless market, II-VI is a global leader in the strategic supply chain for materials and devices utilized in the latest 4G and 5G base station infrastructure. The deployment of 5G wireless is accelerating globally, driving the demand for RF power amplifiers that can operate efficiently in new high-frequency bands and be manufactured on a technology platform that can scale to meet the growing demand. GaN-on-SiC RF power amplifiers have superior performance, compared with devices based on silicon, over a wide spectrum of 5G operating frequencies in the gigahertz range, including in the millimeter-wave bands.

We are a market leader in the technology development and large-volume manufacturing of 100 mm and 150 mm semi-insulating SiC substrates. These substrates are utilized by customers worldwide to manufacture GaN-on-SiC HEMT RF power amplifier devices that are embedded in remote radio heads in 4G and 5G wireless base stations. In areas of high bandwidth demand, 5G antennas with beamforming technology utilizing multiple devices per antenna are expected to be densely deployed, increasing the demand for GaN-on-SiC power amplifiers by approximately an order of magnitude or more versus 4G antennas. Looking forward, II-VI continues to advance the state of the art in SiC substrates, with a strong technology portfolio of 30 active patents using highly differentiated and proprietary manufacturing platforms and technologies including crystal growth, substrate fabrication, and polishing. Our demonstration of the world's first prototype 200 mm semi-insulating SiC substrates will enable the RF power amplifier market to continue to scale, increasingly replacing functions performed by devices based on silicon and enabling new applications.

Leveraging this materials expertise, II-VI has invested aggressively in a world-class 150 mm compound semiconductor manufacturing platform and is developing a fully vertically integrated, 150 mm wafer fabrication capability to manufacture the state-of-the-art GaN-on-SiC HEMT devices that will enable these next-generation wireless networks.

Industrial Market

Our laser optics and solutions for the industrial market remain well-positioned. Our vertically integrated and market-leading ZnSe optics and components, due to their inherent low loss at around the 10-micron wavelength, have enabled high-power CO₂ laser systems for many decades and remain critical to the steady stream of new deployments as well as to continued operation, serving as replacement optics for the installed base of CO₂ lasers. II-VI continues to introduce products that address new and growing applications for low-power CO₂ lasers, such as drilling and cutting plastics, textiles, leather, wood, and other organic materials, for which the CO₂ laser's 10-micron wavelength is ideally suited. CO₂ lasers are also at the core of EUV lithography systems, which enable a new generation of smaller and more powerful integrated circuits.

Fiber lasers that operate at about the 1-micron wavelength in pulsed or continuous mode have taken a central role in many industrial applications, especially for metal cutting and welding along with precision machining such as marking and microdrilling. II-VI supplies a broad range of materials, components, and subsystems that enable many functions within these fiber lasers, from the laser chips that generate the input optical power to the beam delivery systems that direct the output optical power to the target. The same set of II-VI products is at the core of existing and emerging direct-diode laser systems.

II-VI's broad portfolio of coated optics and crystal materials serves all of these growing laser markets.

Aerospace and Defense Market

II-VI's aerospace and defense solutions enable mission-critical capabilities for applications in high-energy lasers (HELs); contested space; and intelligence, surveillance, and reconnaissance. From uniquely grown single crystals and advanced ceramics, to completely engineered gimbal subsystems, II-VI solutions are embedded on nearly every platform in the field as well as those under development. Coherent laser beam combining and advanced lightweight gimbal technologies, along with domestically produced high-power fiber laser pumps and amplifiers, are enabling next-generation HEL systems and space-based laser communications applications. With the addition of nano-machined single-crystal silicon and grating technologies, together with II-VI's advanced HEL coating capabilities, we enable advanced spectral beam combining and novel microstructured surface capabilities, which are highly valued within the aerospace and defense industry.

Our advanced missile warning, electro-optical targeting, and imaging systems are deployed on virtually every U.S. fixed-wing and rotary platform. Our advanced sapphire, germanium, and multispectral domes provide unique protection to our advanced imaging, seeker, and laser solutions that are packaged behind them. The domes provide hemispherical coverage for airborne, naval, and ground-based systems.

Our solutions for the Lunar Reconnaissance Orbiter (LRO) provided the first images proving that the astronauts' footprints on the moon are still there. The LRO continues to orbit the moon and provide rich information for future lunar landing sites. The LRO camera and its more advanced derivatives, are the basis for many advanced space imaging applications being pursued by our customers. Our solution for the OSIRIS-REx mission enables the first-ever ability for a NASA satellite to touch down on an asteroid (Bennu) and to retrieve a sample and return it to Earth. Our advanced imaging lenses and windows ensure that our customers' vehicles are able to safely and accurately dock with the Space Station. Our advanced telescope solution for the Geostationary Lightning Mapper enables the GOES satellites to detect early lightning strikes and predict tornados a full 20 minutes before previous technology. It forms the basis for many of our customers' advanced multispectral imaging solutions.

II-VI's Aerospace & Defense (A&D) Division maintains separate business development, IT infrastructure, accounting, finance, engineering, and manufacturing facilities in the United States with strictly controlled access; they are dedicated to our U.S. government-supported contracts.

Semiconductor Capital Equipment Market

Semiconductor capital equipment requires advanced materials to meet the need for tighter tolerances, enhanced thermal stability, faster wafer transfer speeds, and reduced stage settling times. Our metal-matrix composites and reaction-bonded ceramics enable these applications, thanks to their optimum combination of light weight, strength, hardness, and coefficient of thermal expansion. Our reaction-bonded SiC materials are used to manufacture wafer chucks, lightweight scanning stages, and high-temperature corrosion-resistant wafer support systems. Our cooled SiC mirrors and precision patterned reticles are used in the illumination systems of lithography tools.

Our products enable legacy Deep UV lithography equipment that is widely deployed in semiconductor fabs. In the rapidly accelerating market of Extreme UV lithography systems, CO₂ lasers are used to generate extreme-ultraviolet light. These CO₂ lasers and beam delivery systems leverage our broad portfolio of CO₂ laser optics, CdTe modulators, and high-power damage-resistant polycrystalline CVD diamond windows to route the powerful laser beam to a tin droplet from which EUV light will emanate. Due to its very high mechanical and thermal performance characteristics, our reaction-bonded SiC is used in structural support systems that are integral to EUV lithography optics to meet critical requirements for optical system stability.

Life Sciences Market

Within the life sciences end market, II-VI focuses on analytical instrumentation that integrates light and/or thermal-management solutions. We segment this market into three application areas (biotechnology, medical laser, and scientific) and deliver targeted and unique product portfolios for each segment. II-VI vertically integrates from the component level to more complex subassemblies and even full systems. Applications within the biotechnology segment include flow cytometry, genome sequencing, PCR, molecular diagnostics, imaging, and spectroscopy, to name a few. Our broad product portfolio delivers solutions covering illumination, light management, and thermal control. Visible-wavelength lasers and multicolored laser engines provide low-noise, high-performance, reliable light sources. Optical components and subassemblies such as filters, lenses, flow cells, gratings, objective lenses, and patterned reticles are embedded into these instruments to manage light delivery. Our state-of-the-art thermal engines precisely control temperature and uniformity across large areas such as plate and block assemblies, even extending to reagent or sample chilling.

Medical laser and clinical procedures are increasingly performed with systems that integrate our lasers, optics, and thermal solutions. These applications are performed at or near the patient, requiring extreme precision and often complex designs and typically reach into the NIR and IR wavelengths. Applications are varied, from laser-based treatments and surgeries to medical imaging and even point of care. II-VI's semiconductor laser bars and stacks are used in applications such as hair and wrinkle removal. Crystals and laser cavities, along with custom-designed lens assemblies, are used for ophthalmic, dental, and dermatological surgeries. Finally, thermal components and subassemblies deliver solutions for medical-based applications such as providing heating and cooling to the human body and medical laser temperature control.

For the scientific segment, II-VI's solutions are the building blocks of molecular spectroscopy and imaging-based platforms. These tools typically target environmental applications such as water, air, food and beverage, pharmaceutical, and agricultural testing and monitoring. II-VI continues to leverage its core laser, optics, and temperature-control expertise to deliver custom components and subassembly-level solutions at all wavelengths, from UV to NIR and IR.

Consumer Electronics Market

II-VI manufactures VCSELs, VCSEL arrays, and optical filters for the consumer electronics market. Our VCSEL products leverage our world-class 6-inch GaAs platform, combining our epitaxial wafer growth and wafer fabrication capabilities. Our VCSELs have been used in consumer products such as computer mice and mobile phones for many years. Our VCSELs are also widely deployed in datacenters and HDMI optical cables as well as in vehicle steering wheels. This expertise in VCSEL technology has been leveraged for the growing 3D sensing market. 3D sensing was the first application to drive the demand for relatively large two-dimensional VCSEL arrays. A typical design for 3D sensing requires tens or hundreds of VCSELs per chip in order to scale up the optical power required for, for example, face recognition. Therefore, 3D sensing applications created the need to scale up manufacturing to 6-inch wafer processing. Today, II-VI is one of the very few vertically integrated 6-inch VCSEL manufacturers with a proven track record in high-volume manufacturing of high-reliability, large multi-emitter VCSEL dies designed for 3D sensing. An increasing number of consumer devices are coming on the market with embedded VCSELs, including multiple smartphones and tablets, smart watches, and household robots.

In addition to VCSELs, our products for the consumer electronics market include wafer-scale optics, diffraction gratings, thermoelectric coolers, and substrates for sensing and AR/VR applications.

Automotive Market

II-VI is a global leader in SiC substrates for power electronics that improve the energy efficiency of electric and hybrid-electric vehicles. Power electronics based on SiC enable systems to achieve significantly improved power utilization and conversion efficiencies, lower operating temperatures, and reduced thermal loads. This in turn enables either increased driving range or reductions in required battery capacity for a given range, which results in a significant cost reduction. Our comprehensive understanding of crystal growth and materials processing was acquired over decades of sustained R&D and manufacturing, allowing us to continuously evolve our technology and IP portfolio. We offer a full range of substrate diameters, including the world's first 200 mm substrate.

Our industry-leading semiconductor lasers, optics, and materials can be leveraged for LiDAR systems embedded in advanced driver-assistance systems (ADAS) for autonomous vehicles. LiDAR sensors enable ADAS to perform functions such as emergency braking and adaptive cruise control. II-VI's broad portfolio of components and modules for LiDAR include high-power laser diodes, fiber amplifiers, frequency-modulated continuous-wave detection solutions, optical filters for detection, mirrors for scanning, and thermoelectric coolers for temperature control. Our product offerings include edge-emitters and VCSELs that are capable of providing a wide range of peak powers for direct illumination and imaging for short- and long-range LiDAR solutions. Emission and return windows on LiDAR systems are available in ultrahard bulk materials, such as SiC and diamond, and with optical coatings that are water-shedding and oil-resistant. Our thermoelectric coolers are qualified to automotive standards and enable LiDAR systems to operate with optimal performance and efficiency.

New generations of vehicles will be equipped with a greater number of sensors that can monitor a driver's alertness and let occupants interact with the console using touch sensing or gesture recognition. In the event of a collision, sensors can help provide critical information about the position and attention of occupants to activate restraints and deploy airbags in the best possible manner. II-VI's products enable the most advanced in-cabin control and monitoring systems for the latest applications in human-vehicle interactions. Our VCSELs are ideal for optical touch sensors integrated in dashboards or steering wheels. Our VCSEL arrays can provide infrared cabin illumination and structured light projection to enable gesture recognition.

Automotive manufacturers continue to differentiate their products with comfort features such as temperature-controlled car seats and cup holders, all of which require thermoelectric devices. II-VI offers thermal-management solutions that are qualified to stringent automotive industry standards and tailored to various applications.

Sales and Marketing

We market our products through a direct sales force and through representatives and distributors around the world. Our market strategy is focused on understanding our customers' requirements and building market awareness and acceptance of our products. New products are continually being developed and introduced to our new and established customers in all markets.

The Company has centralized its worldwide sales and strategic marketing functions. Sales offices have been strategically aligned to best serve and distribute products to our worldwide customer base. There are significant cooperation, coordination, and synergies among our business units, which capitalize on the most efficient and appropriate marketing channels to address diverse applications within our markets.

Our sales force develops effective communications with our OEM and end-user customers worldwide. Products are actively marketed through key account relationships, personal selling, select advertising, attendance at trade shows, and customer partnerships. Our sales force includes a highly trained technical sales support team to assist customers in designing, testing, and qualifying our products as key components of our customers' systems. As of June 30, 2022, we employed approximately 400 individuals in sales, marketing, and support.

We do business with a number of customers in the aerospace and defense industry, who in turn generally contract with a governmental entity, typically a U.S. government agency.

Customers

The representative groups of customers by segment are as follows:

Photonic Solutions		
Business Unit:	Our Customers Are:	Representative Customers:
ROADM	Worldwide network system and subsystem providers of telecommunications, data communications, and CATV	<ul style="list-style-type: none"> • Ciena Corporation • Fujitsu Network Communications • NEC Corporation • Nokia Corporation
Transceivers	Cloud service providers, telecom service providers, enterprises with internal datacom networks, datacom OEMs, telecom OEMs	<ul style="list-style-type: none"> • ADVA • Alibaba Group • Cisco Systems Inc. • Dell Technologies • Extreme Networks Inc. • H3C Technologies Co. Ltd. • Tencent
Advanced Optics	Global manufacturers of industrial and medical laser optics and crystals including commercial and consumer products used in a wide array of instruments, sensors, fiber lasers, displays, and projection devices	<ul style="list-style-type: none"> • Coherent, Inc. • Corning Incorporated. • Han's Laser Technology Industry Group Co. Ltd.

Compound Semiconductors		
Business Unit:	Our Customers Are:	Representative Customers:
Engineered Materials & Laser Optics	OEM and system integrators of industrial, medical, personal comfort, and aerospace and defense laser systems; laser end users who require replacement optics for their existing laser systems	<ul style="list-style-type: none"> • Bystronic Laser AG • Coherent, Inc. • TRUMPF GmbH + Co. KG
	Manufacturers and developers of integrated-circuit capital equipment for the semiconductor capital equipment industry	<ul style="list-style-type: none"> • ASML Holding NV • Carl Zeiss AG • KLA Corporation • Nikon Corporation
	Primary mineral processors, refiners, and providers of specialized materials used in laser optics, photovoltaics, semiconductors, thermoelectric coolers, metallurgy, and industrial products	<ul style="list-style-type: none"> • Aurubis AG
	Manufacturers of equipment and devices for aerospace, defense, and commercial markets	<ul style="list-style-type: none"> • Lockheed Martin Corporation • Raytheon Technologies Corporation
Laser Devices & Systems	Manufacturers of industrial laser components, optical communications equipment, and consumer technology applications; automotive manufacturers	<ul style="list-style-type: none"> • Ford Motor Company • Hisense Broadband Inc. • Laserline GmbH • Wuhan Raycus Fiber Laser Technologies Co. Ltd.
	OEM and subsystem integrators of aiming, machine vision, biomedical instruments, and fiber lasers; laser cutting machines for superhard materials	<ul style="list-style-type: none"> • TRUMPF GmbH + Co. KG
New Ventures & Wide-Bandgap Electronics Technologies	Manufacturers and developers of equipment and devices for high-power RF electronics and high-power, voltage-switching, and power-conversion systems for commercial and aerospace and defense applications	<ul style="list-style-type: none"> • Dongguan Tianyu Semiconductor Technology Co., Ltd. • Infineon Technologies AG • IQE PLC • Showa Denko KK • Sumitomo Electric Device Innovations Inc.
Optoelectronic & RF Devices	Manufacturers of consumer electronics and transceivers	<ul style="list-style-type: none"> • Apple Inc.

Competition

II-VI is a global leader in many of its product families. We compete, in part, on the basis of our reputation for offering highly engineered products. We also compete by leveraging our intellectual property, ability to scale, product quality, on-time delivery, and technical support. We believe that our vertical integration, manufacturing facilities and equipment, experienced technical and manufacturing employees, and worldwide marketing and distribution channels provide us with competitive advantages. The representative groups of our competitors by segment are as follows:

Photonic Solutions		
Areas of Competition:	Competitors:	
Optical components, modules, and subsystems for optical communications	<ul style="list-style-type: none"> • Accelink Technologies Co. Ltd. • Cisco Systems, Inc. • Eoptolink Technology Inc., Ltd. • InLC Technology • InnoLight Technology Ltd. 	<ul style="list-style-type: none"> • Intel Data Platforms Group • Lumentum Operations LLC • Molex LLC • O-Net Communications Ltd.
Optical and crystal components, thin-film coatings, and subassemblies for lasers and metrology instruments	<ul style="list-style-type: none"> • CASTECH Inc. • Casix Inc. • IDEX Corporation 	<ul style="list-style-type: none"> • Optowide Technologies Co. Ltd. • Research Electro-Optics Inc. • On Semiconductor Corporation
Compound Semiconductors		
Areas of Competition:	Competitors:	
Infrared laser optics	<ul style="list-style-type: none"> • American Photonics • Forerun (China) • Lambda Research Corporation • MKS Instruments Inc. • Ophir Corporation • Research Electro-Optics Inc. 	<ul style="list-style-type: none"> • Pleiger Maschinenfabrik GmbH & Co. KG • Sigma Koki Co. Ltd. • Sumitomo Electric Industries Ltd. • ULO Optics Ltd. • Wavelength Opto-Electronic Pte. Ltd.
Automated equipment and laser materials processing tools to deliver high-power 1-micron laser systems	<ul style="list-style-type: none"> • Empower • Mitsubishi Cable Industries Ltd. 	<ul style="list-style-type: none"> • Optoskand AB • Precitec GmbH & Co.
Biomedical instruments for flow cytometry, DNA sequencing, and fluorescence microscopy	<ul style="list-style-type: none"> • Shimadzu Corporation 	<ul style="list-style-type: none"> • Pavilion Integration Corporation
Semiconductor laser diodes for the industrial and consumer markets	<ul style="list-style-type: none"> • ams AG • Broadcom Inc. • Everbright LLC • Hamamatsu Photonics KK • Jenoptik AG • Lumentum Operations LLC • nLight Inc. 	<ul style="list-style-type: none"> • Optowell Co. Ltd. • OSRAM Licht AG • Panasonic Corporation • ROHM Co. Ltd. • Sony Corporation • TRUMPF GmbH + Co. KG
Infrared optics for aerospace and defense applications	<ul style="list-style-type: none"> • In-house fabrication and thin-film coating capabilities of major aerospace and defense customers 	
Thermoelectric components, subassemblies, and systems	<ul style="list-style-type: none"> • Ferrotec Corporation • Laird Thermal Systems 	<ul style="list-style-type: none"> • Komatsu Ltd.
Metal-matrix composites and reaction-bonded ceramic products	<ul style="list-style-type: none"> • Berliner Glas GmbH • CoorsTek Inc. • Japan Fine Ceramics Co. Ltd. 	<ul style="list-style-type: none"> • Kyocera Corporation • Morgan Advanced Materials PLC • Schunk GmbH
Single-crystal SiC substrates	<ul style="list-style-type: none"> • Wolfspeed, Inc. • Dow Inc. • ROHM Co. Ltd. 	<ul style="list-style-type: none"> • SICC Co. Ltd. • TankeBlue Semiconductor Co. Ltd.
Refining and materials recovery services for high-purity rare metals	<ul style="list-style-type: none"> • 5N Plus Inc. • RETORTE GmbH 	<ul style="list-style-type: none"> • Vital Materials Co. Ltd.

In addition to competitors who manufacture products similar to those we produce, there are other technologies and products available that may compete with our technologies and products.

Our Strategy

Our strategy is to grow businesses with world-class engineered materials capabilities to advance our current customers' strategies, reach new markets through innovative technologies and platforms, and enable new applications in large and growing markets. A key strategy of ours is to develop and manufacture high-performance materials and, in certain cases, components incorporating those materials, that are differentiated from those produced by our competitors. We focus on providing components that are critical to the heart of our customers' products that serve the applications mentioned above.

We continue to grow the number and size of our key accounts. A significant portion of our business is based on sales orders with market leaders, which enables our forward planning and production efficiencies. We intend to continue capitalizing and executing on this proven model, participating effectively in the growth of the markets discussed above, and continuing our focus on operational excellence as we execute our primary business strategies:

Key Business Strategies:	Our Plan to Execute:
Identify New Products and Markets	Identify new technologies, products, and markets to meet evolving customer requirements for high-performance engineered materials through our dedicated RD&E programs, and thereby increase new product revenue and maximize return on investment
Leverage Vertical Integration	Combine RD&E and manufacturing expertise, operating with a bias toward components and production machines; reduce cost and lead time to enhance competitiveness, time to market, profitability, and quality; and enable our customers to offer competitive products
Investment in Scalable Manufacturing	Strategically invest in, evaluate, and identify opportunities to consolidate and automate manufacturing operations worldwide to increase production capacity, capabilities, and cost-effectiveness
Enhance Our Performance and Reputation as a Quality and Customer Service Leader	Continue to improve upon our established reputation as a consistent, high-quality supplier of engineered materials and optoelectrical components that are built into our customers' products
	Execute our global quality transformation process, eliminating costs of nonconforming materials and processes
Identify and Complete Strategic Acquisitions and Alliances	Identify acquisition opportunities that accelerate our access to emerging, high-growth segments of the markets we serve and further leverage our competencies and economies of scale

Research, Development, and Engineering

During the fiscal year ended June 30, 2022, the Company continued to identify, invest in, and focus our research and development on new products and platform technologies in an effort to accelerate our organic growth. This approach is managed under a disciplined innovation program that we refer to as the II-VI Phase Gate Process.

We devote significant resources to RD&E programs directed at the continuous improvement of our existing products and processes, and to the timely development of new materials, technologies, platforms, and products. We believe that our RD&E activities are essential to establishing and maintaining a leadership position in each of the markets we serve. In addition, certain manufacturing personnel support or participate in our research and development efforts on an ongoing basis. We believe the close interaction between the development and manufacturing functions enhances the direction of our projects, reducing costs and accelerating technology transfers. It also offers development opportunities to our employees.

During the fiscal year ended June 30, 2022, we focused our RD&E investments in the following areas:

Photonic Solutions	
Area of Development:	Our RD&E Investments:
Photonics design	Continue to develop and improve crystal materials, precision optical parts, and laser device components for photonics applications; develop new platforms and capabilities

Datacom transceivers	Continue cost reduction on 10G-100G products by leveraging our engineering resources and manufacturing scale; continue to develop high-end 200G/400G/800G/1.6T products, including RF and packaging designs; explore high-density, high-bandwidth co-packaged designs through silicon photonics; continue to develop vertically integrated designs, including with lasers and ICs
Coherent optics and transceivers	Drive further integration to reduce size and power consumption; increase bandwidth to enable 100G/200G/400G coherent transceivers; optimize product cost with new design architectures and more efficient manufacturing flow
Pump lasers	Continue to invest in our next-generation GaAs pump laser portfolio and flexible manufacturing footprint to address evolving terrestrial and undersea markets Develop InP growth and processing capability together with associated packaging technology for Raman amplification applications
Optical amplifiers and subsystems	Invest in and broaden the range of amplifiers and integrated subsystems, including ROADMs
WSS	Develop LC and LCOS technologies and associated module designs for WSS; invest in manufacturing equipment, including the WSS automated assembly platform
Optical monitoring	Continue optical channel monitoring investment Develop OTDRs to monitor the health of the fiber plant
Micro-optics manufacturing	Shift toward smaller, more compact optics and automated assembly platforms and packages Invest in manufacturing equipment for computerized processes

Compound Semiconductors	
Area of Development:	Our RD&E Investments:
High-power laser diodes	Increase output power and reliability of edge-emitting laser diodes for fiber laser, optical communications, and sensing applications
Semiconductor lasers	Develop high-power VCSELs, including multi-junction VCSELs for 3D sensing and consumer devices as well as next-generation, high-speed VCSELs for datacom applications
Devices for optical communications, sensing, and high-volume manufacturing	Develop high-power and high-speed InP lasers, detectors, and components for applications in optical communications and sensing
High-power beam delivery	Develop multi-kW beam delivery systems and cables for welding and cutting
CVD diamond technology	Develop CVD diamond for EUV applications and as substrates for high-performance RF devices Broaden our portfolio beyond infrared window applications
SiC technology	Develop advanced SiC substrate growth technologies to support emerging markets in GaN RF and SiC power electronics
SiC epitaxial wafers, devices, and modules	Continuous improvement to maintain world-class, high-quality, large-diameter substrates and epitaxial wafers Develop SiC epitaxial wafers, SiC diodes and MOSFET devices, and SiC power modules
Thermoelectric materials and devices	Continue to develop leading Bi ₂ Te ₃ materials for thermoelectric cooling/heating Focus on thermoelectric power-generation capability in order to introduce new products
Metal-matrix composites and reaction-bonded ceramics	Support industrial customers in developing application-specific material wear-out, light-weight high mechanical stability materials, and thermal-management solutions

Fiber laser technologies	Develop high-power fiber laser technologies for aerospace, defense, and commercial applications
High-speed ICs	Develop high-performance analog TIAs, laser drivers, and clock and data-recovery retimer (CDR) ICs

Other R&D	
Area of Development:	Our RD&E Investments:
Digital signal processors (DSPs)	Develop high-speed DSPs for coherent optical communications
Optoelectronic chip hybrid integration platform (OCHIP)	Develop wafer-scale assembly technologies and processes for integration of lasers, optics, and ICs
Silicon photonics devices	Develop silicon-based photonic ICs for coherent and direct-detection transceivers and co-packaging solutions
Battery technology	Develop technology for lithium-ion batteries and recycling processes
Space-based laser communications	Develop technology and devices for space-based laser communications
Additive manufacturing	Develop alloys and multibeam delivery systems for laser additive manufacturing
	Develop binder jet additive manufacturing for advanced ceramic components

Research and development expenditures were \$377 million, \$330 million, and \$339 million for the fiscal years 2022, 2021, and 2020, respectively.

Import and Export Compliance

We are required to comply with all relevant import/export and economic sanctions laws and regulations, including:

- The import regulations administered by U.S. Customs and Border Protection;
- The International Traffic in Arms Regulations administered by the U.S. Department of State, Directorate of Defense Trade Controls, which among other things impose licensing requirements on the export from the United States of certain defense articles and defense services, generally including items that are specially designed or adapted for a military application and/or listed on the United States Munitions List;
- The Export Administration Regulations administered by the U.S. Department of Commerce, Bureau of Industry and Security, which among other things impose licensing requirements on certain dual-use goods, technology, and software; and
- The regulations administered by the U.S. Department of the Treasury, Office of Foreign Assets Control, implementing economic sanctions against designated countries, governments, and persons based on U.S. foreign policy and national security considerations.

Foreign governments also have similar import and export control, and sanctions, laws, and regulations. For additional discussion regarding our import, export, and sanctions compliance, see the discussion in Item 1A. Risk Factors of this Annual Report on Form 10-K.

Trade Secrets, Patents, and Trademarks

Our use of trade secrets, proprietary know-how, trademarks, copyrights, patents, contractual confidentiality, and IP ownership provisions helps us develop and maintain our competitive position with respect to our products and manufacturing processes. We aggressively pursue process and product patents in certain areas of our businesses and in certain jurisdictions across the globe. We have entered into selective intellectual property licensing agreements. We have confidentiality and noncompetition agreements with certain personnel. We require our U.S. employees to sign a confidentiality and noncompetition agreement upon commencement of their employment with us. As of June 30, 2022, we had a total of approximately 2,100 patents globally.

Executive Officers of the Registrant

The executive officers of the Company and their respective ages and positions as of June 30, 2022, are set forth below. Each executive officer listed has been appointed by the board of directors to serve until removed or until a successor is appointed and qualified.

Name	Age	Position
Vincent D. Mattera, Jr.	66	Chair and Chief Executive Officer
Giovanni Barbarossa	60	Chief Strategy Officer and President, Compound Semiconductors
Walter R. Bashaw II	57	President
Mary Jane Raymond	61	Chief Financial Officer and Treasurer
Christopher Koeppen	51	Chief Technology Officer
Ronald Basso	62	Chief Legal Officer and Compliance Officer and Secretary

Vincent D. Mattera, Jr. initially served as a member of the II-VI board of directors from 2000 to 2002. Dr. Mattera joined the Company as a Vice President in 2004 and served as Executive Vice President from January 2010 to November 2013, when he became the Chief Operating Officer. In November 2014, Dr. Mattera became the President and Chief Operating Officer and was reappointed to the board of directors. In November 2015, he became the President of II-VI. In September 2016, Dr. Mattera became the Company's third President and Chief Executive Officer in 45 years and served as the Company's President through June 2019, when the roles of President and Chief Executive Officer were separated. Dr. Mattera became the Company's Board Chair in November 2021. During his career at II-VI, he has assumed successively broader management roles, including as a lead architect of the Company's diversification strategy. He has provided vision, energy, and dispatch to the Company's growth initiatives, including overseeing the acquisition-related integration activities in the United States, Europe, and Asia, thereby establishing additional platforms. These have contributed to a new positioning of the Company into large and transformative global growth markets while increasing considerably the global reach of the Company, deepening the technology and IP portfolio, broadening the product roadmap and customer base, and increasing the potential of II-VI.

Prior to joining II-VI as an executive, Dr. Mattera had a continuous 20-year career in the Optoelectronic Device Division of AT&T Bell Laboratories, Lucent Technologies, and Agere Systems, during which he led the development and manufacturing of semiconductor laser-based materials and devices for optical and data communications networks. Dr. Mattera has nearly 40 years of leadership experience in the compound semiconductor materials, device technology, operations, and markets that are core to II-VI's business and strategy. Dr. Mattera holds a B.S. degree in chemistry from the University of Rhode Island (1979) and a Ph.D. in chemistry from Brown University (1984). He completed the Stanford University Executive Program (1996). Dr. Mattera is a member of the Cleveland Clinic Florida Regional Board of Directors.

Giovanni Barbarossa joined II-VI in October 2012 and has been the Chief Strategy Officer of the Company and the President of the Compound Semiconductors Segment since July 2019. Previously, he was the Chief Technology Officer of the Company and the President of the Laser Solutions Segment. Dr. Barbarossa was employed at Avanex Corporation from 2000 through 2009, serving in various executive positions in product development and general management, ultimately serving as President and Chief Executive Officer. When Avanex merged with Bookham Technology, forming Oclaro, Dr. Barbarossa became a member of the board of directors of Oclaro and served as such from 2009 to 2012. Previously, he held senior management roles in the Optical Networking Division of Agilent Technologies and in the Network Products Group of Lucent Technologies. He was previously a Member of Technical Staff, then Technical Manager at AT&T Bell Labs, and a Research Associate at British Telecom Labs. Dr. Barbarossa graduated from the University of Bari, Italy, with a B.S. degree in Electrical Engineering, and holds a Ph.D. in Photonics from the University of Glasgow, U.K.

Walter R. Bashaw II has served as the Company's President since July 2019. Mr. Bashaw served as the Company's Senior Vice President, Corporate Strategy and Development, Administration, from October 2018 to July 2019. Previously, Mr. Bashaw served as the Company's Interim General Counsel and Secretary from December 2015 until March 2017. Mr. Bashaw also previously was a Managing Shareholder and a Director of the law firm of Sherrard, German & Kelly, P.C. in Pittsburgh, Pennsylvania, until October 2018 and Of Counsel at SGK from October 2018 until June 2019. Mr. Bashaw graduated from the Pennsylvania State University with a B.S. degree in Logistics and also holds a J.D. degree from the University of Pittsburgh School of Law.

Mary Jane Raymond has been Chief Financial Officer and Treasurer of the Company since March 2014. Previously, Ms. Raymond was Executive Vice President and Chief Financial Officer of Hudson Global Inc. from 2005 to 2013. Ms. Raymond was the Chief Risk Officer and Vice President and Corporate Controller at Dun and Bradstreet Inc. from 2002 to 2005. Additionally, she was the Vice President, Merger Integration, at Lucent Technologies from 1997 to 2002 and held several management positions at Cummins Engine Company from 1988 to 1997. In 2019, Ms. Raymond was named to the board of directors and Audit Committee of Veeco, Inc. Ms. Raymond holds a B.A. degree in Public Management from St. Joseph's University, and an MBA from Stanford University.

Christopher Koeppen joined the Company in 2011 following the acquisition of Aegis Lightwave, Inc., where he served as General Manager, Aegis-NJ. He was named General Manager of II-VI's Agile Network Products Division in 2012 and Director of Corporate Strategic Technology Planning in 2015. He then served as Vice President of the Industrial Laser Group and Corporate Strategic Technology Planning from 2017, until his appointment as Chief Technology Officer in 2019. Previously, Dr. Koeppen was co-founder and Chief Executive Officer of CardinalPoint Optics, prior to its acquisition by Aegis Lightwave. He has more than two decades of progressively increasing general and technology management experience in high-tech companies, including at Meriton Networks, Mahi Networks, Photuris, and Lucent Technologies. Dr. Koeppen holds a Ph.D. in Physics from the University of Pennsylvania, where he was an AT&T Bell Laboratories Scholar, and B.S. degrees in Physics and Mathematics from the Pennsylvania State University.

Ronald Basso joined II-VI in 2019 as Vice President, Corporate Development, and was named Chief Legal and Compliance Officer and Corporate Secretary in March 2022. Previously, Mr. Basso was the Executive Vice President of Business Development, General Counsel & Secretary for Black Box Corp. for six years. Before that, his 28-year career at Buchanan Ingersoll & Rooney PC involved significant client engagements on corporate, governance, securities, capital markets transactions, M&A, and executive compensation matters. He served on the II-VI IPO team in 1987 and as II-VI's SEC counsel for 25 years until he joined Black Box. Mr. Basso holds a bachelor's degree in Economics from the University of Pittsburgh and a J.D. degree from the University of Pittsburgh School of Law.

In addition, following the consummation of the Merger on July 1, 2022, Mark Sobey became an executive officer of the Company and serves as President of the Company's Lasers Segment. Dr. Sobey, 62, served as Coherent Inc.'s Executive Vice President and Chief Operating Officer from April 2020 through the consummation of the Merger. Dr. Sobey previously served as Coherent Inc.'s Executive Vice President and General Manager of OEM Laser Sources (OLS) from 2016 to April 2020, Executive Vice President and General Manager of Specialty Laser Systems (SLS) from 2010 to 2016, and Senior Vice President and General Manager of SLS from 2007 until 2010. Prior to Coherent Inc., Dr. Sobey spent over 20 years in the Laser and Fiber Optics Telecommunications industries, including serving in Senior Vice President roles in Product Management at Cymer and Global Sales at JDS Uniphase. Dr. Sobey received his PhD in Engineering and BSc in Physics from the University of Strathclyde in Scotland.

Availability of Information

Our internet addresses are www.ii-vi.com and www.coherent.com. Information contained on our websites are not part of, and should not be construed as being incorporated by reference into, this Annual Report on Form 10-K. We post the following reports on our website as soon as reasonably practical after they are electronically filed with or furnished to the SEC: our Annual Reports on Form 10-K, our Quarterly Reports on Form 10-Q, our Current Reports on Form 8-K, and any amendments to those reports or statements filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act. In addition, we post our proxy statements on Schedule 14A related to our annual shareholders' meetings as well as reports filed by our directors, officers, and 10% beneficial owners pursuant to Section 16 of the Exchange Act. In addition, all filings are available via the SEC's website (www.sec.gov). We also make our corporate governance documents available on our website, including the Company's Code of Ethical Business Conduct, Governance Guidelines, and the charters for our board committees. All such documents are located on the Investors page of our website and are available free of charge.

Item 1A. RISK FACTORS

The following are certain risk factors that could affect our business, results of operations, financial position or cash flows. These risk factors should be considered along with the forward-looking statements contained in this Annual Report on Form 10-K, because these factors could cause our actual results or financial condition to differ materially from those projected in forward-looking statements. The following discussion is not an all-inclusive listing of risks, although we believe these are the material risks that we face. If any of the following occur, our business, results of operations, financial position, or cash flows could be adversely affected. You should carefully consider these factors, as well as the other information contained in this Annual Report on Form 10-K, when evaluating an investment in our securities.

Risks Relating to Our Business and Our Industry

Investments in future markets of potential significant growth may not result in the expected return.

We continue to make investments in programs with the goal of gaining a greater share of end markets using semiconductor lasers and other components, including those used for 3D sensing, power electronics and emerging 5G technology. We cannot guarantee that our investments in capital and capabilities will be sufficient. The potential end markets, as well as our ability to gain market share in such markets, may not materialize on the timeline anticipated or at all. We cannot be sure of the end market price, specification, or yield for products incorporating our technologies. Our technologies could fail to fulfill, partially or completely, our target customers' specifications. We cannot guarantee the end market customers' acceptance of our technologies. Further, we may be unable to fulfill the terms of our contracts with our target customers, which could result in penalties of a material nature, including damages, loss of market share, and loss of reputation.

Our competitive position depends on our ability to develop new products and processes.

To meet our strategic objectives, we must develop, manufacture, and market new products and continue to update our existing products and processes to keep pace with market developments to address increasingly sophisticated customer requirements. Our success in developing and selling new and enhanced products and processes depends upon a variety of factors, including strategic product selection, efficient completion of product design and development, timely implementation of manufacturing and assembly processes, effective sales and marketing, and high-quality and successful product performance in the market.

The introduction by our competitors of products or processes using new developments that are better or faster than ours could render our products or processes obsolete or unmarketable. We intend to continue to make significant investments in research, development, and engineering to achieve our goals. There can be no assurance that we will be able to develop and introduce new products or enhancements to our existing products and processes in a manner which satisfies customer needs or achieves market acceptance. The failure to do so could have a material adverse effect on our ability to grow our business and maintain our competitive position and on our results of operations and/or financial condition.

Our products may contain defects that are not detected until deployed, which could increase our costs, reduce our revenues, cause us to lose key customers, or expose us to litigation related to our products.

Some systems that use our products are inherently complex in design and require ongoing maintenance. As a result of the technological complexity of our products, in particular our excimer laser annealing tools used in the flat panel display market, changes in our or our suppliers' manufacturing processes or the inadvertent use of defective materials by us or our suppliers could result in a material adverse effect on our ability to achieve acceptable manufacturing yields and product reliability. Our customers may also discover defects in our products after the products have been fully deployed and operated under peak stress conditions. In addition, some of our products are combined with products from other vendors which may contain defects. Should problems occur, it may be difficult to identify the source of the problem. If we are unable to correct defects or other problems, we could experience, among other things, loss of customers, increased costs of product returns and warranty expenses, damage to our brand reputation, failure to attract new customers or achieve market acceptance, diversion of development and engineering resources, or legal action by our customers. The occurrence of any one or more of the foregoing factors could have a material adverse effect on our business, results of operations, or financial condition.

Our competitive position may still require significant investments.

We continuously monitor the marketplace for strategic opportunities, and our business strategy includes expanding our product lines and markets through both internal product development and acquisitions. Consequently, we expect to continue to consider strategic acquisition of businesses, products, or technologies complementary to our business. This may require significant investments of management time and financial resources. If market demand is outside our organic capabilities, if a strategic acquisition is required and we cannot identify one or execute on it, and/or if financial investments that we undertake distract management, do not result in the expected return on investment, expose us to unforeseen liabilities, or jeopardize our ability to comply with our credit facility covenants due to any inability to integrate the business, adjust to operating a larger and more complex organization, adapt to additional political and other requirements associated with the acquired business, retain staff, or work with customers, we could suffer a material adverse effect on our business, results of operations, or financial condition.

We may be unable to successfully implement our acquisitions strategy or integrate acquired companies and personnel with existing operations.

We have acquired several companies, including Finisar Corporation (“Finisar”) in September 2019 and Coherent in July 2022. We expect to expand and diversify our operations with additional acquisitions, but we may be unable to identify or complete prospective acquisitions for many reasons, including increasing competition from other potential acquirers, the effects of consolidation in our industries, and potentially high valuations of acquisition candidates. In addition, applicable antitrust laws and other regulations may limit our ability to acquire targets or force us to divest an acquired business line. If we are unable to identify suitable targets or complete acquisitions, our growth prospects may suffer, and we may not be able to realize sufficient scale and technological advantages to compete effectively in all markets.

To the extent that we complete acquisitions, we may be unsuccessful in integrating acquired companies or product lines with existing operations, or the integration may be more difficult or more costly than anticipated. We expect to incur substantial expenses related to the acquisition of Coherent and the related integration of Coherent and its subsidiaries.

Some of the risks that may affect our ability to integrate or realize anticipated benefits from acquired companies, businesses, or assets include those associated with:

- unexpected losses of key employees of the acquired company;
- conforming the acquired company’s standards, processes, procedures, and controls with our operations, including integrating enterprise resource planning systems and other key business applications;
- coordinating new product and process development;
- increasing complexity from combining operations;
- increasing the scope, geographic diversity, and complexity of our operations;
- difficulties in consolidating facilities and transferring processes and know-how;
- diversion of management’s attention from other business concerns; and
- actions we may take in connection with acquisitions, such as:
 - using a significant portion of our available cash;
 - issuing equity securities, which would dilute current shareholders’ percentage ownership;
 - incurring significant debt;
 - incurring or assume contingent liabilities, known or unknown, including potential lawsuits, infringement actions, or similar liabilities;
 - incurring impairment charges related to goodwill or other intangibles; and
 - facing antitrust or other regulatory inquiries or actions.

In addition, the market prices of our outstanding securities could be adversely affected if the effect of any acquisitions on our consolidated financial results is dilutive or is below the market’s or financial analysts’ expectations, or if there are unanticipated changes in the business or financial performance of the acquired or combined company. Any failure to successfully integrate acquired businesses may disrupt our business and adversely impact our business, results of operations, or financial condition.

Although we expect that our acquisitions will result in cost savings, synergies, and other benefits, we may not realize those benefits, or be able to retain those benefits even if realized.

The success of our acquisitions will depend in large part on our success in integrating the acquired operations, strategies, technologies, and personnel. We may fail to realize some or all of the anticipated benefits of an acquisition if the integration process takes longer than expected or is more costly than expected. If we fail to meet the challenges involved in successfully integrating any acquired operations or to otherwise realize any of the anticipated benefits of an acquisition, including any expected cost savings and synergies, our operations could be impaired. In addition, the overall integration of an acquired business can be a time-consuming and expensive process that, without proper planning and effective and timely implementation, could significantly disrupt our business.

Potential difficulties that we may encounter in the integration process include:

- the integration of management teams, strategies, technologies and operations, products, and services;
- the disruption of ongoing businesses and distraction of their respective management teams from ongoing business concerns;
- the retention of, and possible decrease in business from, existing customers;
- the creation of uniform standards, controls, procedures, policies, and information systems;
- the reduction of the costs associated with combined operations;
- the integration of corporate cultures and maintenance of employee morale;
- the retention of key employees; and
- potential unknown liabilities associated with the acquired business.

The anticipated cost savings, synergies, and other benefits of any acquisition typically assume a successful integration of the acquired business and are based on projections and other assumptions, which are inherently uncertain. Even if integration is successful, anticipated cost savings, synergies, and other benefits may not be achieved.

Our future success depends on continued international sales, and our global operations are complex and present multiple challenges to manage.

We anticipate that international sales will continue to account for a significant portion of our revenues for the foreseeable future. The failure to maintain our current volume of international sales could materially affect our business, results of operations, financial condition, and/or cash flows.

We manufacture products in numerous countries worldwide. Our operations vary by location and are influenced on a location-by-location basis by local customs, languages, and work practices, as well as different local weather conditions, management styles, and education systems. In addition, multiple complex issues may arise concurrently in different countries, potentially hampering our ability to respond in an effective and timely manner. Any inability to respond in an effective and timely manner to issues in our global operations could have a material adverse effect on our business, results of operations, or financial condition.

We may fail to accurately estimate the size and growth of our markets and our customers' demands.

We make significant decisions based on our estimates of customer requirements. We use our estimates to determine the levels of business we seek and accept, production schedules, personnel needs, and other resource requirements.

Customers may require rapid increases in production on short notice. We may not be able to purchase sufficient supplies or allocate sufficient manufacturing capacity to meet such increases in demand. Rapid customer ramp-up and significant increases in demand may strain our resources or negatively affect our margins. Inability to satisfy customer demand in a timely manner may harm our reputation, reduce our other opportunities, damage our relationships with customers, reduce revenue growth, and/or cause us to incur contractual penalties.

Alternatively, downturns in the industries in which we compete may cause our customers to significantly reduce their demand. With respect to orders we initiate with our suppliers to address anticipated demand from our customers, certain suppliers may have required noncancellable purchase commitments or advance payments from us, and those obligations and commitments could reduce our ability to adjust our inventory or expense levels to reflect declining market demands. Unexpected declines in customer demands can result in excess or obsolete inventory and additional charges. Because certain of our sales, research and development, and internal manufacturing overhead expenses are relatively fixed, a reduction in customer demand likely would decrease our gross margins and operating income.

We may encounter increased competition, and we may fail to accurately estimate our competitors' or our customers' willingness and capability to backward integrate into our competencies and thereby displace us.

We may encounter substantial competition from other companies in the same market, including established companies with significant resources. Some of our competitors may have financial, technical, marketing, or other capabilities that are more extensive than ours. They may be able to respond more quickly than we can to new or emerging technologies and other competitive pressures. We may not be able to compete successfully against our present or future competitors. Our failure to compete effectively could have a material adverse effect on our business, results of operations, or financial condition.

A significant portion of our business may be subject to cyclical market factors.

Our business is dependent on the demand for products produced by end-users of industrial lasers, optical communication products, components for semiconductor capital equipment, and components for 3D sensing. Many of these end-users are in industries that have historically experienced a highly cyclical demand for their products. As a result, demand for our products is subject to these cyclical fluctuations. Fluctuations in demand could have a material adverse effect on our business, results of operations or financial condition.

The long sales cycles for many of our products may cause us to incur significant expenses.

Customers often view the purchase of our products as a significant and strategic decision. As a result, customers typically expend significant effort in evaluating, testing and qualifying our products before making a decision to purchase them, resulting in a lengthy design-in sales cycle. While our customers are evaluating our products and before they place an order with us, we may incur substantial sales and marketing and research and development expenses to customize our products to the customers' needs. We may also expend significant management efforts, increase manufacturing capacity and increase inventory of long lead-time components or materials prior to receiving an order. Even after this evaluation process, a potential customer may not purchase our products. As a result, these long sales cycles may cause us to incur significant expenses without ever receiving revenues to offset such expenses.

We have entered into supply agreements that commit us to supply products on specified terms.

We have supply agreements with some customers that require us to supply products and allocate sufficient capacity to make these products. We have also agreed to pricing schedules and methodologies that could result in penalties if we fail to meet development, supply, capacity, and quality commitments. Failure to do so may cause us to be unable to generate the amount of revenue or the level of profitability we expect from these arrangements. Our ability to realize a profit under some of these agreements will be subject to the level of customer demand, the cost of maintaining facilities and manufacturing capacity, and supply chain capability. If we fail to fulfill our commitments under these supply agreements, our business, after using all remedies available, financial conditions, and results of operations may suffer a material adverse effect.

We depend on highly complex manufacturing processes that require feeder materials, components, and products from limited sources of supply.

Our operations are dependent upon a supply chain of difficult-to-make or difficult-to-refine products and materials. Some of our product inflow is subject to yield reductions from growth or fabrication losses, and thus the quantities we may receive are not consistently predictable. Customers may also change a specification for a product that our suppliers cannot meet.

Some of our products, particularly in the OLED display industry, require designs and specifications that are at the cutting-edge of available technologies and change frequently to meet rapidly evolving market demands. By their very nature, the types of components used in such products can be difficult and unpredictable to manufacture and may only be available from a single supplier, which increases the risk that we may not obtain such components in a timely manner. Identifying alternative sources of supply for certain components could be difficult and costly, result in management distraction in assisting our current and future suppliers to meet our and our customers' technical requirements, and cause delays in shipments of our products while we identify, evaluate and test the products of alternative suppliers. Any such delay in shipment would result in a delay or cancellation of our ability to convert such order into revenues. Furthermore, financial or other difficulties faced by these suppliers or significant changes in demand for these components or materials could limit their availability. We continue to consolidate our supply base and move supplier locations. When we transition locations, we may increase our inventory of such products as a "safety stock" during the transition, which may cause the amount of inventory reflected on our balance sheet to increase. Additionally, many of our customers rely on sole source suppliers. In the event of a disruption of our customers' supply chain, orders from our customers could decrease or be delayed.

We also make products of which we are one of the world's largest suppliers. We use high-quality, optical-grade ZnSe in the production of many of our IR optical products. We are a leading producer of ZnSe for our internal use and for external sale. The production of ZnSe is a complex process requiring a highly controlled environment. A number of factors, including defective or contaminated materials, could adversely affect our ability to achieve acceptable manufacturing yields of high-quality ZnSe. Lack of adequate availability of high-quality ZnSe could have a material adverse effect upon our business. There can be no assurance that we will not experience manufacturing yield inefficiencies that could have a material adverse effect on our business, results of operations, or financial condition.

We produce hydrogen selenide gas, which is used in our production of ZnSe. There are risks inherent in the production and handling of such material. Our lack of proper handling of hydrogen selenide could require us to curtail our production of the gas. Our potential inability to internally produce hydrogen selenide could have a material adverse effect on our business, results of operations, or financial condition.

In addition, we produce and use other high-purity and relatively uncommon materials and compounds to manufacture our products, including, but not limited to, ZnS, GaAs, yttrium aluminum garnet, yttrium lithium fluoride, calcium fluoride, germanium, selenium, telluride, Bi₂Te₃, and SiC. A significant failure of our internal production processes or our suppliers to deliver sufficient quantities of these necessary materials on a timely basis could have a material adverse effect on our business, results of operations, or financial condition.

Furthermore, we have historically relied exclusively on our own production capability to manufacture certain strategic components, crystals, semiconductor lasers, fiber, lasers and laser-based systems. We also manufacture certain large format optics. Because we manufacture, package and test these components, products and systems at our own facilities, and such components, products and systems are not readily available from other sources, any interruption in manufacturing would adversely affect our business.

Delays in transportation of products and possible shortages of critical raw materials, parts, equipment and other resources may adversely affect our results of operations.

Current challenges in global shipping and other aspects of commercial transportation, such as congestion in ports, a shortage in containers and a general lack of space on ships and trucks, have adversely impacted our operations. Because of this ongoing situation, we face a risk of continued supply chain disruptions. Additionally, our revenues and collections also may be adversely affected by transportation delays that could have a negative impact on the timing of payments that we receive under our sales arrangements. If these issues continue beyond the short term, our overall supply chain and our revenues derived from our sales flow could be adversely impacted.

We participate in the microelectronics market, which requires significant research and development expenses to develop and maintain products and a failure to achieve market acceptance for our products could have a significant negative impact on our business and results of operations.

The microelectronics market is characterized by rapid technological change, frequent product introductions, the volatility of product supply and demand, changing customer requirements and evolving industry standards. The nature of this market requires significant research and development expenses to participate, with substantial resources invested in advance of material sales of our products to our customers in this market. Additionally, our product offerings may become obsolete given the frequent introduction of alternative technologies. In the event either our customers' or our products fail to gain market acceptance, or the microelectronics market fails to grow, it would likely have a significant negative effect on our business and results of operations.

There are risks associated with our participation in the flat panel display market, including as a result of there being a relatively limited number of end customer manufacturers.

In the flat panel display market, it is unclear when the timing will be, or whether it will occur at all, for any further build-out of fabs for the manufacture of OLED screens, and there are a relatively limited number of manufacturers who are the end customers for our annealing products. Given macroeconomic conditions, varying consumer demand and technical process limitations at manufacturers, we may see fluctuations in orders, including periods with no or few orders, and our customers may seek to reschedule or cancel orders.

Additionally, challenges in meeting evolving technological requirements for these complex products by us and our suppliers could result in delays in shipments and rescheduled or cancelled orders by our customers. This could negatively impact our backlog, timing of revenues and results of operations.

Increases in commodity prices may adversely affect our results of operations and financial condition.

We are exposed to a variety of market risks, including the effects of increases in commodity prices. Our businesses purchase, produce, and sell high-purity selenium and other raw materials based upon quoted market prices from minor metal exchanges. The negative impact from increases in commodity prices might not be recovered through our product sales, which could have a material adverse effect on our net earnings and financial condition.

A widespread health crisis could materially and adversely affect our business, financial condition, and results of operations.

The outbreak of a widespread health crisis, whether global in scope or localized in an area in which we, our customers or our suppliers do business, could have a material adverse effect on our operations and the operations of our suppliers and customers. Potential impacts on our operations include:

- significant reductions in demand for one or more of our products or a curtailment to one or more of our product lines caused by, among other things, any temporary inability of our customers to purchase and utilize our products in next-stage manufacturing due to shutdown orders or financial hardship;
- workforce constraints triggered by any applicable shutdown orders or stay-at-home policies;
- disruptions to our third-party manufacturing and raw materials supply arrangements caused by constraints over our suppliers' workforce capacity, financial, or operational difficulties;
- disruption in our own ability to produce and ship products, including components we use in the production of other products;
- heightened risk and uncertainty regarding the loss or disruption of essential third-party service providers, including transportation services, contract manufacturing, marketing, and distribution services;

- requirements to comply with governmental and regulatory responses such as quarantines, import/export restrictions, price controls, or other governmental or regulatory actions, including closures or other restrictions that limit or close our operating and manufacturing facilities, restrict our workforce's ability to travel or perform necessary business functions, or otherwise impact our suppliers or customers, which could adversely impact our operating results; and
- increased operating expenses and potentially reduced efficiency of operations.

In the early stages of the outbreak of the global novel coronavirus (COVID-19) in 2020, we closely monitored the impact of the COVID-19 pandemic on all aspects of our business, including the impact to our suppliers, customers, and employees, as well as the impact to the countries and markets in which we operate. We began focusing intensely on mitigating the adverse impacts of COVID-19 on our foreign and domestic operations, starting by protecting our employees, suppliers, and customers. We have modified our business practices for the continued health and safety of our employees - including, among other things, implementing a remote work policy to the fullest extent possible, a limited travel policy, the distribution of and mandatory use of personal protective equipment, reorganizing and adjusting the timing of manufacturing personnel shifts, temperature monitoring for entering our facilities, and a social distancing policy - and we may take further actions, or be required to take further actions, that are in the best interests of our employees.

Our suppliers, distributors and customers have also implemented similar measures, which has resulted in, and we expect it will continue to result in, disruptions or delays and higher costs. The implementation of health and safety practices by us or our suppliers, distributors or customers could impact customer demand, supplier deliveries, our productivity, and costs, which could have a material adverse impact on our business, financial condition and results of operations.

While we believe that we have been successful in identifying, managing, and mitigating the economic disruption impacts of the COVID-19 pandemic on us, we cannot provide any assurance that we similarly will be able to mitigate the impacts of any future widespread health crises, including as a result of any variants of COVID-19. Factors beyond our current knowledge or control, including the duration and severity of any outbreak, as well as any resulting governmental and regulatory actions, could cause any such crisis to have a material adverse effect on our business, operating results, and financial condition.

Global economic downturns may adversely affect our business, operating results, and financial condition.

Current and future conditions in the global economy have an inherent degree of uncertainty. As a result, it is difficult to estimate the level of growth or contraction of the global economy as a whole. It is even more difficult to estimate growth or contraction in various parts, sectors, and regions of the economy, including the industrial, aerospace and defense, optical communications, telecommunications, semiconductor, consumer, microelectronics, precision manufacturing, instrumentation, and life science markets in which we participate. All aspects of our forecasts depend on estimates of growth or contraction in the markets we serve. Thus, prevailing global economic uncertainties render estimates of future income and expenditures very difficult to make.

Global economic downturns may affect industries in which our customers operate. These changes could include decreases in the rate of consumption or use of our customers' products. Such conditions could have a material adverse effect on demand for our customers' products and, in turn, on demand for our products.

Adverse changes may occur in the future as a result of declining or flat global or regional economic conditions, fluctuations in currency and commodity prices, wavering confidence, capital expenditure reductions, unemployment, decline in stock markets, contraction of credit availability, or other factors affecting economic conditions. For example, factors that may affect our operating results include disruption in the credit and financial markets in the United States, Europe, and elsewhere, adverse effects of slowdowns in the U.S., European, Chinese or other Asian economies, reductions or limited growth in consumer spending or consumer credit, global trade tariffs, and other adverse economic conditions that may be specific to the Internet, e-commerce, and payments industries.

These changes may negatively affect sales of products and increase exposure to losses from bad debt and commodity prices, the cost and availability of financing, and costs associated with manufacturing and distributing products. Any economic downturn could have a material adverse effect on our business, results of operations, or financial condition.

Foreign currency risk may negatively affect our revenues, cost of sales, and operating margins, and could result in foreign exchange losses.

We conduct our business and incur costs in the local currency of most countries in which we operate. We incur currency transaction risk whenever one of our operating subsidiaries enters into either a purchase or a sales transaction using a different currency from the currency in which it operates, or holds assets or liabilities in a currency different from its functional currency. Changes in exchange rates can also affect our results of operations when the value of sales and expenses of foreign subsidiaries are translated to U.S. dollars. We cannot accurately predict the impact of future exchange rate fluctuations on our results of operations. Further, given the volatility of exchange rates, we may not be able to effectively manage our currency risks, and any volatility in currency exchange rates may increase the price of our products in local currency to our foreign customers or

increase the manufacturing cost of our products, either of which may have an adverse effect on our financial condition, cash flows, and profitability.

We are subject to complex and rapidly changing import and export regulations which could limit our sales and decrease our profitability and we may be subject to legal and regulatory consequences if we do not comply with applicable export control laws and regulations

Obtaining export licenses can be difficult, time-consuming and require interpretation of complex regulations. Failure to obtain export licenses for these shipments could significantly reduce our revenue and materially adversely affect our business, financial condition, relationships with our customers and results of operations. Additionally, failure to comply with the various regulatory requirements could subject us to significant fines, suspension of export privileges or disbarment.

Additionally, we are subject to the passage of and changes in the interpretation of regulation by U.S. government entities at the federal, state, and local levels and by non-U.S. agencies, including, but not limited to, the following:

- We are required to comply with import laws and export control and economic sanctions laws, which may affect our ability to enter into or complete transactions with certain customers, business partners, and other persons. In certain circumstances, export control and economic sanctions regulations may prohibit the export of certain products, services, and technologies. We may be required to obtain an export license before exporting a controlled item, and granting of a required license cannot be assured. Compliance with the import laws that apply to our businesses may restrict our access to, and may increase the cost of obtaining, certain products and could interrupt our supply of imported inventory.
- Exported technologies necessary to develop and manufacture certain products are subject to U.S. export control laws and similar laws of other jurisdictions. We may be subject to adverse regulatory consequences, including government oversight of facilities and export transactions, monetary penalties, and other sanctions for violations of these laws. In certain instances, these regulations may prohibit us from developing or manufacturing certain of our products for specific applications outside the United States. Failure to comply with any of these laws and regulations could result in civil and criminal, monetary, and nonmonetary penalties; disruptions to our business; limitations on our ability to import and export products and services; and damage to our reputation.

Changes in trade policies, such as increased import duties, could increase the costs of goods imported into the United States or China.

In March 2018, President Trump announced new steel and aluminum tariffs. Then, in July 2018, the United States imposed increased tariffs on products of Chinese origin, and China responded by increasing tariffs on U.S.-origin goods. On the export side, denial orders and placing companies on the U.S. entity list could decrease our access to customers and markets and materially impact our revenues in the aggregate. In April 2018, for example, the U.S. Department of Commerce issued a denial order against two companies in the telecommunications market. In 2019 and 2020, the U.S. Department of Commerce placed a number of entities, including Huawei, on the U.S. Entity List. If we cannot obtain relief from, or take other action to mitigate the impact of, these additional duties and restrictions and duties, our business and profits may be materially and adversely affected. Further changes in the trade policy of the United States or of other countries in which we do cross-border business, or additional sanctions, could result in retaliatory actions by other countries that could materially and negatively impact the volume of economic activity in the United States or globally, which, in turn, may decrease our access to customers and markets, reduce our revenues, and increase our operating costs.

Our association with customers that are or become subject to U.S. regulatory scrutiny or export restrictions could negatively impact our business and create instability in our operations. Governmental actions such as these could subject us to actual or perceived reputational harm among current or prospective investors, suppliers or customers, customers of our customers, other parties doing business with us, or the general public. Any such reputational harm could result in the loss of investors, suppliers, or customers, which could harm our business, financial condition, operating results, or prospects.

Exports of certain of our products are subject to export controls imposed by the U.S. government and administered by the U.S. Departments of State and Commerce. In certain instances, these regulations may require pre-shipment authorization from the administering department. For products subject to the Export Administration Regulations (EAR), administered by the Department of Commerce's Bureau of Industry and Security, the requirement for a license is dependent on the type and end use of the product, the final destination, the identity of the end user, and whether a license exception might apply. Virtually all exports of products subject to the International Traffic in Arms Regulations (ITAR), administered by the Department of State's Directorate of Defense Trade Controls, require a license. Certain of our products are subject to EAR controls.

Additionally, certain other products that we sell, including certain products developed with government funding, are subject to ITAR. Products developed and manufactured in our foreign locations are subject to export controls of the applicable foreign nation. Given the current global political climate, obtaining export licenses can be difficult and time-consuming. Failure to obtain export licenses for these shipments, or having one or more of our customers be restricted from receiving exports from us, could significantly reduce our revenue and materially adversely affect our business, financial condition, and results of

operations. Compliance with regulations of the United States and other governments also subjects us to additional fees and costs. The absence of comparable restrictions on competitors in other countries may adversely affect our competitive position.

Our current credit agreement and any other credit or similar agreements into which we may enter in the future may restrict our operations, particularly our ability to respond to changes or to take certain actions regarding our business.

Our credit agreement, dated as of July 1, 2022, by and among us, the lenders and other parties thereto, and JP Morgan Chase Bank, NA, as administrative agent and collateral agent (the “New Credit Agreement”) contains a number of restrictive covenants that may impose operating and financial restrictions on us and limit our ability to engage in acts that may be in our long-term best interest, including restrictions on our ability to incur indebtedness, grant liens, undergo certain fundamental changes, fund non-US operations, dispose of assets, make certain investments, enter into certain transactions with affiliates, and make certain restricted payments, in each case subject to limitations and exceptions set forth in the New Credit Agreement.

The New Credit Agreement also contains customary events of default that include, among other things, certain payment defaults, covenant defaults, cross-defaults to other indebtedness, change of control defaults, judgment defaults, and bankruptcy and insolvency defaults. Such events of default may allow the creditors to accelerate the related debt and may result in the acceleration of any other debt to which a cross-acceleration or cross-default provision applies, which could have a material adverse effect on our business, operations, and financial results. Furthermore, if we are unable to repay the amounts due and payable under the New Credit Agreement, those lenders could proceed against the collateral granted to them to secure that indebtedness, which could force us into bankruptcy or liquidation. In the event that our lenders accelerated the repayment of the borrowings, we may not have sufficient assets to repay that indebtedness. Any acceleration of amounts due under the New Credit Agreement would likely have a material adverse effect on us. As a result of these restrictions, we may be limited in how we conduct business, unable to raise additional debt or equity financing to operate during general economic or business downturns, or unable to compete effectively or to take advantage of new business opportunities.

In addition, we may enter into other credit agreements or other debt arrangements from time to time which contain similar or more extensive restrictive covenants and events of default, in which case we may face similar or additional limitations as a result of the terms of those credit agreements or other debt arrangements.

Any inability to access financial markets from time to time to raise required capital, finance our working capital requirements or our acquisition strategies, or otherwise support our liquidity needs could negatively impact our ability to finance our operations, meet certain obligations, or implement our growth strategy.

We from time to time borrow under our existing credit facility or use proceeds from sales of our securities to fund portions of our operations, including working capital investments and financing of our acquisition strategies. In the past, market disruptions experienced in the United States and abroad have materially impacted liquidity in the credit and debt markets, making financing terms for borrowers less attractive and, in certain cases, have resulted in the unavailability of certain types of financing. Uncertainty in the financial markets may negatively impact our ability to access additional financing or to refinance our existing debt arrangements on favorable terms or at all, which could negatively affect our ability to fund current and future expansion as well as future acquisitions and development. These disruptions may include turmoil in the financial services industry, volatility in the markets where our outstanding securities trade, and changes in general economic conditions in the areas where we do business. If we are unable to access funds at competitive rates, or if our short-term or long-term borrowing costs increase, our ability to finance our operations, meet our short-term obligations, and implement our operating strategies could be adversely affected.

In the future, we may be required to raise additional capital through public or private financing or other arrangements. Such financing may not be available on acceptable terms or at all, and our failure to raise capital when needed could harm our business and prospects. Additional equity financing may be dilutive to the holders of our outstanding capital stock, and debt financing, if available, may involve restrictive covenants that may limit our ability to undertake certain activities that we otherwise would find to be desirable. Further, debt service obligations associated with any debt financing could reduce our profitability. If we cannot raise funds on acceptable terms, we may not be able to grow our business or respond to competitive pressures.

There are limitations on the protection of our intellectual property, and we may from time to time be involved in costly intellectual property litigation or indemnification.

We rely on a combination of trade secret, patent, copyright, and trademark laws, combined with employee confidentiality, noncompetition, and nondisclosure agreements to protect our intellectual property rights. There can be no assurance that the steps we take will be adequate to prevent misappropriation of our technology or intellectual property. Furthermore, there can be no assurance that third parties will not assert infringement claims against us in the future.

Asserting our intellectual property rights or defending against third-party claims could involve substantial expense. In the event that a third party were successful in a claim that one of our processes infringed its proprietary rights, we could be required to pay substantial damages or royalties, or spend substantial amounts in order to obtain a license or modify processes so that they

no longer infringe such proprietary rights. Any such event could have a material adverse effect on our business, results of operations, or financial condition.

The design, processes, and specialized equipment utilized in our engineered materials, advanced components, and subsystems are innovative, complex, and difficult to duplicate. However, there can be no assurance that others will not develop or patent similar technology, or that all aspects of our proprietary technology will be protected. Others have obtained patents covering a variety of materials, devices, equipment, configurations, and processes, and others could obtain patents covering technology similar to ours. We may be required to obtain licenses under such patents, and there can be no assurance that we would be able to obtain such licenses, if required, on commercially reasonable terms, or that claims regarding rights to technology will not be asserted that may adversely affect our results of operations. In addition, our research and development contracts with agencies of the U.S. government present a risk that project-specific technology could be disclosed to competitors as contract reporting requirements are fulfilled. We also enter into development projects from time to time that might result in intellectual property developed during a project that is assigned to the other party without us retaining rights to that intellectual property or is jointly owned with the other party.

Our global operations are subject to complex legal and regulatory requirements.

We manufacture products in numerous countries worldwide. Operations inside and outside of the United States are subject to many legal and regulatory requirements, some of which are not aligned with others. These include tariffs, quotas, taxes and other market barriers, restrictions on the export or import of technology, potentially limited intellectual property protection, import and export requirements and restrictions, anti-corruption and anti-bribery laws, foreign exchange controls and cash repatriation restrictions, foreign investment rules and regulations, data privacy requirements, competition laws, employment and labor laws, pensions and social insurance, and environmental health and safety laws and regulations.

Compliance with these laws and regulations can be onerous and expensive, and requirements differ among jurisdictions. New laws, changes in existing laws, and abrogation of local regulations by national laws may result in significant uncertainties in how they will be interpreted and enforced. Failure to comply with any of these foreign laws and regulations could have a material adverse effect on our business, results of operations, or financial condition.

We may face particular data privacy and security and data protection risks due to laws and regulations regulating the protection or security of personal and other sensitive data.

We may face particular data privacy and security and data protection risks due to laws and regulations regulating the protection or security of personal and other sensitive data, including in particular several laws and regulations that have recently been enacted or adopted or are likely to be enacted or adopted in the future. For instance, effective May 25, 2018, the European General Data Protection Regulation ("GDPR") imposed additional obligations and risk upon our business and increased substantially the penalties to which we could be subject in the event of any non-compliance. GDPR requires companies to satisfy requirements regarding the handling of personal data (generally, of EU residents), including its use, protection and the rights of affected persons regarding their data. Failure to comply with GDPR requirements could result in fines of up to 20 million Euro or 4% of global annual revenues, whichever is higher. We have taken extensive measures to ensure compliance with GDPR and to minimize the risk of incurring any penalties and we continue to adapt to the developing interpretation and enforcement of GDPR as well as emerging best practice standards. For example, we have introduced an international Data Protection Organization, a European Data Protection Policy, a system for Data Protection Management and Documentation and implemented an international Intra Group Data Transfer Agreement including the EU Standard Contractual Clauses. In addition, several other jurisdictions around the world have recently enacted privacy laws or regulations similar to GDPR. For instance, California enacted the California Consumer Privacy Act ("CCPA"), which became effective January 1, 2020 and which gives consumers many of the same rights as those available under GDPR. Several laws similar to the CCPA have been proposed in the United States at both the federal and state level. Like GDPR, other similar laws and regulations, as well as any associated inquiries or investigations or any other government actions, may be costly to comply with, result in negative publicity, increase our operating costs, require significant management time and attention, and subject us to remedies that may harm our business.

There also have also been recent significant developments concerning privacy and data security in China, where we have significant operations. For example, the Data Security Law of the People's Republic of China (the "Data Security Law") took effect in September 2021. The Data Security Law imposes data security and privacy obligations on entities and individuals carrying out data processing activities and also introduces a data classification and hierarchical protection system based on the importance of data in economic and social development and the degree of harm it may cause to national security, public interests, or legitimate rights and interests of individuals or organizations if such data are tampered with, destroyed, leaked, illegally acquired, or illegally used. The appropriate level of protection measures is required to be taken for each respective category of data. Further, the Personal Information Protection Law (the "PIPL") took effect in China in November 2021. The PIPL raises the protection requirements for processing personal information. Because many specific requirements of the PIPL remain to be clarified, the ultimate impact of the PIPL currently is unknown. Fines for PIPL violations range from \$7.7M to up

to 5% of the infringing company's previous year's revenues. We may be required to make adjustments to our business practices to comply with the personal information protection laws and regulations in China.

Data breach incidents and breakdowns of information and communication technologies could disrupt our operations and impact our financial results.

In the course of our business, we collect and store sensitive data, including intellectual property (both our own and that of our customers), as well as proprietary business information. We could be subject to service outages or breaches of security systems which may result in disruption, unauthorized access, misappropriation, or corruption of this information. Security breaches of our network or data, including physical or electronic break-ins, vendor service outages, computer viruses, attacks by hackers or similar breaches can create system disruptions, shutdowns, and unauthorized disclosure of confidential information. If we are unable to prevent or contain such security or privacy breaches, our operations could be disrupted or we could suffer legal claims, loss of reputation, financial loss, property damage, or regulatory penalties.

We use and generate potentially hazardous substances that are subject to stringent environmental regulations.

Hazardous substances used or generated in some of our research and manufacturing facilities are subject to stringent environmental regulation. We believe that our handling of such substances is in material compliance with applicable environmental, safety, and health regulations at each operating location. We invest substantially in proper personal protective equipment and process controls, including monitoring and specialized training, to minimize risks to employees, surrounding communities, and the environment that could result from the presence and handling of such hazardous substances. When exposure problems or potential exposure problems have been uncovered, corrective actions have been implemented, and re-occurrence has been minimal or nonexistent.

We have in place emergency response plans with respect to our generation and use of the hazardous gases, which include hydrogen selenide, hydrogen sulfide, arsine, phosphine, and silane. Special attention has been given to all procedures pertaining to these gaseous materials to minimize the chance of accidental release into the atmosphere and to provide for an integrated system for monitoring and mitigating risk.

With respect to the manufacturing, use, storage, and disposal of the low-level radioactive material thorium fluoride, our facilities and procedures have been inspected and licensed by the Nuclear Regulatory Commission. Thorium-bearing by-products are collected and shipped as solid waste to a government-approved low-level radioactive waste disposal site in Clive, Utah.

The generation, use, collection, storage, and disposal of all other hazardous by-products, such as suspended solids containing heavy metals or airborne particulates, are believed by us to be in material compliance with regulations. We believe that we have obtained all of the permits and licenses required for operation of our business.

From time to time new regulations are enacted, and it is difficult to anticipate how such regulations will be implemented and enforced. We continue to evaluate the necessary steps for compliance with regulations as they are enacted. The implementation of such regulations may require us to incur additional costs and expend internal resources.

Although we do not know of any material environmental, safety, or health problems in our properties, processes, or products, there can be no assurance that problems will not develop in the future that could have a material adverse effect on our business, results of operations, or financial condition.

We have a substantial amount of debt, which could adversely affect our business, financial condition, or results of operations and prevent us from fulfilling our debt-related obligations.

As of June 30, 2022, we had approximately \$2.3 billion of outstanding indebtedness on a consolidated basis. Immediately following the closing of the Coherent acquisition on July 1, 2022, we had \$5.0 billion of outstanding indebtedness, including under (i) our \$850 million senior secured term loan A facility (the "Term A Facility"), our \$2.8 billion senior secured term loan B facility (the "Term Loan B Facility", and together with the Term A Facility, the "Senior Credit Facilities") and (ii) our \$990 million 5.000% senior notes due 2029 (the "2029 Notes"). Additionally we have \$350 million of undrawn capacity under our senior secured revolving credit facility (the "Revolving Credit Facility). We may also incur additional indebtedness in the future by entering into new financing arrangements. Our indebtedness could have important consequences for us, including:

- making it difficult for us to satisfy all of our obligations with respect to our debt, or to our trade or other creditors;
- increasing our vulnerability to adverse economic or industry conditions;
- limiting our ability to obtain additional financing to fund capital expenditures and acquisitions, particularly when the availability of financing in the capital markets is limited;
- requiring us to pay higher interest rates upon refinancing or on our variable-rate indebtedness if interest rates rise;
- requiring a substantial portion of our cash flows from operations and the proceeds of any capital markets offerings or loan borrowings for the payment of interest on our debt and reducing our ability to use our cash flows to fund working capital, capital expenditures, acquisitions, and general corporate requirements;

- limiting our flexibility in planning for, or reacting to, changes in our business and the industries in which we operate; and
- placing us at a competitive disadvantage to less leveraged competitors.

We may not generate sufficient cash flow from operations, together with any future borrowings, to enable us to pay our indebtedness or to fund our other liquidity needs. We may need to refinance all or a portion of our indebtedness, on or before its maturity. We may not be able to refinance any of our indebtedness on commercially reasonable terms or at all. In addition, we may incur additional indebtedness in order to finance our operations, fund acquisitions, or repay existing indebtedness. If we cannot service our indebtedness, we may have to take actions such as selling assets, pursuing sales of additional debt or equity securities, or reducing or delaying capital expenditures, strategic acquisitions, investments, or alliances. Any such actions, if necessary, may not be able to be effected on commercially reasonable terms or at all, or on terms that would be advantageous to our stockholders, or on terms that would not require us to breach the terms and conditions of our existing or future debt agreements.

Certain of our financial arrangements, including our Senior Credit Facilities, are made at variable rates that use interbank offered rates, or IBORs, including the London Interbank Offered Rate, or LIBOR (or metrics derived from or related to LIBOR), as a benchmark for establishing the interest rate. IBORs are or have been reformed, may cease to be available or may be declared to be no longer representative of the underlying market and economic realities. In such a case IBORs and specifically LIBOR may need to be replaced with a replacement rate. In March 2021, the United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced that it intends to cease or otherwise declare as no longer representative certain LIBOR settings on December 31, 2021 and the remainder of the U.S. dollar LIBOR settings on June 30, 2023. The New Credit Agreement contains provisions addressing the end of the use of LIBOR as a benchmark rate of interest and a mechanism for determining an alternative benchmark rate of interest. At this time, we cannot predict how markets will respond to reform or the proposed alternative rates or the effect of any changes to IBORs or the discontinuation or non-representativeness of LIBOR. New methods of calculating IBORs that may be established or the establishment of alternative reference rates could have an adverse impact on the market value for or value of IBOR-linked securities, loans and other financial obligations or extensions of credit held by or due to us. Changes in market interest rates may influence our financing costs, returns on financial investments and the valuation of derivative contracts and could reduce our earnings and cash flows. There is no guarantee that a transition from IBORs and specifically LIBOR to an alternative will not result in financial market disruptions, significant increases in benchmark rates, or borrowing costs to borrowers, any of which could have an adverse effect on our business, financial condition, and results of operations.

The agreements that govern our senior credit facilities and our 2029 Notes contain various covenants that impose restrictions on our business, which may affect our ability to operate our businesses.

The New Credit Agreement and the Indenture, dated as of December 10, 2021 (the "Indenture"), which provides for the 2029 Notes, contain various affirmative and negative covenants that will, subject to certain significant exceptions, restrict our ability to, among other things, have liens on our property, incur additional indebtedness, enter into sale and lease-back transactions, make loans, advances or other investments, make non-ordinary course asset sales, declare or pay dividends or make other distributions with respect to equity interests, and/or merge or consolidate with any other person or sell or convey certain of our assets to any one person, among other things.

In addition, the Term Loan A Facility and Revolving Credit Facility require that the Company maintain (i) a maximum total net leverage ratio, as defined in the New Credit Agreement, initially of 5.25 to 1.00 as of the last day of each fiscal quarter, commencing with the end of the first full fiscal quarter after the Closing Date, stepping down to 4.00 to 1.00 at December 31, 2023 and thereafter and (ii) an interest coverage ratio, as defined in the New Credit Agreement, of at least 2.50 to 1.00.

Our ability to comply with these provisions may be affected by events beyond our control. Failure to comply with these covenants could result in an event of default, which, if not cured or waived, could accelerate our repayment obligations under the New Credit Agreement or the Indenture, as applicable. If such indebtedness is accelerated, there can be no assurance that we will have sufficient financial resources or that we will be able to arrange financing to repay our borrowings at such time.

Unfavorable changes in tax rates, tax liabilities, or tax accounting rules could negatively affect future results.

As a global company, we are subject to taxation in the United States and various other countries and jurisdictions. As such, we must exercise a level of judgment in determining our worldwide tax liabilities. Our future tax rates could be affected by changes in the composition of earnings in countries with differing tax rates or changes in tax laws as well as changes in our current or future global corporate structure. Changes in tax laws or tax rulings may have a significantly adverse impact on our effective tax rate, including the newly-enacted "Inflation Reduction Act of 2022" and the two-pillar solution for a global minimum level of taxation by the Organization for Economic Co-operation and Development ("OECD"). We are also impacted by the establishment or release of valuation allowances against deferred tax assets, changes in generally accepted accounting principles and continued eligibility for tax holiday benefits.

The enactment of the Tax Cuts and Jobs Act (the “Tax Act”) in December 2017 significantly affected U.S. tax law by changing how the United States imposes tax on multinational corporations. The U.S. Department of Treasury has broad authority under the Tax Act to issue regulations and interpretive guidance. We have applied available guidance to estimate our tax obligations, but new guidance issued by the U.S. Treasury Department may cause us to make adjustments to our tax estimates in future periods.

In addition, we are subject to regular examination of our income tax returns by the U.S. Internal Revenue Service and other tax authorities. This includes challenges to our intercompany transfer pricing arrangements and charges and the appropriate level of profitability for our entities. We regularly assess the likelihood of favorable or unfavorable outcomes resulting from these examinations and Competent Authority processes to determine the adequacy of our provision for income taxes. Although we believe our tax estimates are reasonable, there can be no assurance that any final determination will not be materially different from the treatment reflected in our historical income tax provision and accruals, which could materially and adversely affect our business, results of operation, or financial condition.

Natural disasters or other global or regional catastrophic events could disrupt our operations, give rise to substantial environmental hazards, and adversely affect our results.

We may be exposed to business interruptions due to extreme weather caused by climate change and deforestation, force majeure catastrophes, natural disaster, pandemic, terrorism, or acts of war that are beyond our control. Disruptions to our facilities or systems, or to those of our key suppliers, could also interrupt operational processes and adversely impact our ability to manufacture our products and provide services and support to our customers. As a result, our business, results of operations, or financial condition could be materially adversely affected.

A substantial portion of our research and development activities, manufacturing, and other critical business operations are located near major earthquake faults, for example in Santa Clara, California, an area with a history of seismic events. Any such loss or detrimental impact to any of our operations, logistics or facilities could disrupt our operations, delay production, shipments and revenues and result in large expenses to repair or replace the facility. While we have obtained insurance to cover most potential losses, after reviewing the costs and limitations associated with earthquake insurance, we have decided not to procure such insurance. We believe that this decision is consistent with decisions reached by numerous other companies located nearby. We cannot assure you that our existing insurance coverage will be adequate against all other possible losses.

Russia’s invasion of Ukraine and the resulting conflict has had a negative impact on our business, may continue to negatively impact our business and may have a negative impact on our results of operations.

In February 2022, Russia invaded Ukraine, resulting in the United States, Canada, the European Union (“EU”) and other countries imposing economic sanctions on Russia, some of which have been expanded to include Belarus. The military conflict and the resulting sanctions have caused and are expected to continue to cause significant disruptions in logistics, availability of components and supplies used in the manufacture and services of our products and global markets. The largest source of certain gases which are utilized in the application and servicing of some of our laser products has historically been located in Ukraine. We have accelerated purchases of these gases from other limited sources outside of the conflict zone and, to date, we have avoided any material disruption to our business. Similarly, our end customers for these products are largely located in geographies which have access to these gases from local suppliers.

A material reduction in our access to critical supplies, the disruption in the ability to source components and supplies used in the manufacture, service or use of our products and the availability of shipping and the increased costs therefor would likely negatively impact the results of our operations. Additionally, the consequences of the foregoing or other limitation on the availability of fuels to provide electricity in the EU to businesses at the same current levels could have a material adverse effect on our business, particularly with regard to our ability to manufacture and ship products at our manufacturing locations in Germany, and is likely to result in higher operating costs.

Our success requires us to attract, retain, and develop key personnel and maintain good relations with our employees.

We are highly dependent upon the experience and continuing services of certain scientists, engineers, production, and management personnel. Competition for the services of these personnel is intense. There can be no assurance that we will be able to retain or attract the personnel necessary for our success. The loss of the services of our key personnel could have a material adverse effect on our business, results of operations, or financial condition.

We contract with a number of large end-user service providers and product companies that have considerable bargaining power, which may require us to agree to terms and conditions that could have an adverse effect on our business or ability to recognize revenues.

Large end-user service providers and product companies comprise a significant portion of our customer base. These customers generally have greater purchasing power than smaller entities and, accordingly, often request and receive more favorable terms from suppliers, including us. As we seek to expand our sales to existing customers and acquire new customers, we may be

required to agree to terms and conditions that are favorable to our customers and that may affect the timing of our ability to recognize revenue, increase our costs, and have an adverse effect on our business, financial condition, and results of operations. Furthermore, large customers have increased buying power and ability to require onerous terms in our contracts with them, including pricing, warranties, and indemnification terms. If we are unable to satisfy the terms of these contracts, it could result in liabilities of a material nature, including litigation, damages, additional costs, loss of market share, and loss of reputation. Additionally, the terms these large customers require, such as most-favored customer or exclusivity provisions, may impact our ability to do business with other customers and generate revenues from such customers.

We may be adversely affected by climate change regulations.

In many of the countries in which we operate, government bodies are increasingly enacting legislation and regulations in response to potential impacts of climate change. These laws and regulations may be mandatory. They have the potential to impact our operations directly or indirectly as a result of required compliance by our customers or our supply chain. Inconsistency of regulations may also affect the costs of compliance with such laws and regulations. Assessments of the potential impact of future climate change legislation, regulation, and international treaties and accords are uncertain, given the wide scope of potential regulatory change in countries in which we operate.

We may incur increased capital expenditures resulting from required compliance with revised or new legislation or regulations, added costs to purchase raw materials, lower profits from sales of our products, allowances or credits under a "cap and trade" system, increased insurance premiums and deductibles as new actuarial tables are developed to reshape coverage, changes in competitive position relative to industry peers, changes to profit or loss arising from increased or decreased demand for goods produced by us, or changes in costs of goods sold.

Some of our business units depend from time to time on large purchases from a few significant customers, and any loss, cancellation, reduction, or delay in purchases by these customers could harm the longevity of the business.

A small number of customers have consistently accounted for a significant portion of our revenues, although none individually represent greater than 10% of total revenues. Our success will depend on our continued ability to develop and manage relationships with our major customers. Although we are attempting to expand our customer base, we expect that significant customer concentration will continue for the foreseeable future. We may not be able to offset any decline in revenues from our existing major customers with revenues from new customers, and our quarterly results may be volatile because we are dependent on large orders from these customers that may be reduced, delayed, or cancelled. The markets in which we have historically sold our optical subsystems and components products are dominated by a relatively small number of systems manufacturers, thereby limiting the number of our potential customers.

Our dependence on large orders from a relatively small number of customers makes our relationship with each customer critically important to our business. We cannot ensure that we will be able to retain our major customers, attract additional customers, or that our customers will be successful in selling their products that incorporate our products. In addition, governmental trade action or economic sanctions may limit or preclude our ability to do business with certain customers. We have in the past experienced delays and reductions in orders from some of our major customers. In addition, our customers have in the past sought price concessions from us, and we expect that they will continue to do so in the future. Expense reduction measures that we have implemented over the past several years, and additional action we are taking to reduce costs, may adversely affect our ability to introduce new and improved products, which may, in turn, adversely affect our relationships with some of our key customers. Further, some of our customers may in the future shift their purchases of products from us to our competitors or to joint ventures between these customers and our competitors, or may in certain circumstances produce competitive products themselves. The loss of one or more of our major customers, any reduction or delay in sales to these customers, our inability to successfully develop relationships with additional customers, or future price concessions that we may make could significantly harm our business.

Our operations may be adversely affected if we are unable to manufacture certain products in our manufacturing facilities.

We manufacture some of the components that we incorporate into our subsystem products; in other cases, we provide components to contract manufacturers to produce finished goods. For some of the components and finished goods, we are the sole manufacturer. Our manufacturing processes are highly complex, and issues are often difficult to detect and correct. From time to time we have experienced problems achieving acceptable yields in our manufacturing facilities, resulting in delays in the availability of our products. In addition, if we experience problems with our manufacturing facilities, it would be costly and require a long period of time to move the manufacture of these components and finished good products to a different facility or contract manufacturer, which could result in interruptions in supply and would likely materially impact our financial condition and results of operations. In addition, for a variety of reasons, including changes in circumstances at our contract manufacturers or our own business strategies, we may voluntarily, or be required to, transfer the manufacturing of certain products to other manufacturing sites.

Changes in manufacturing processes are often required due to changes in product specifications, changing customer needs, and the introduction of new products. These changes may reduce manufacturing yields at our contract manufacturers and at our own manufacturing facilities, resulting in reduced margins on those products. Also, our ability to control the quality of products produced by contract manufacturers may be limited and quality issues may not be resolved in a timely manner, which could adversely impact our financial condition or results of operations. In addition, many of our products are sourced from suppliers based outside of the United States, primarily in Asia. Uncertainty with respect to tax and trade policies, tariffs, and government regulations affecting trade between the United States and other countries has recently increased. Major developments in tax policy or trade relations, such as the imposition of tariffs on imported products, could increase our product and product-related costs or require us to seek alternative suppliers, either of which could result in decreased sales or increased product and product-related costs.

Failure to accurately forecast our revenues could result in additional charges for obsolete or excess inventories or noncancellable purchase commitments.

We base many of our operating decisions, and enter into purchase commitments, on the basis of anticipated revenue trends that are highly unpredictable. Some of our purchase commitments are not cancellable, and in some cases we are required to recognize a charge representing an amount of material or capital equipment purchased or ordered that exceeds our actual requirements. Should revenues in future periods fall substantially below our expectations, or should we fail to accurately forecast changes in demand mix, we could be required to record substantial charges for obsolete or excess inventories or noncancellable purchase commitments.

Our markets are unpredictable and characterized by rapid technological changes and evolving standards demanding a significant investment in research and development, and, if we fail to address changing market conditions, our business and operating results will be harmed.

The photonics industry is characterized by extensive research and development, rapid technological change, frequent new product introductions, changes in customer requirements and evolving industry standards. Because this industry is subject to rapid change, it is difficult to predict its potential size or future growth rate. Our success in generating net sales in this industry will depend on, among other things:

- maintaining and enhancing our relationships with our customers;
- the education of potential end-user customers about the benefits of lasers and laser systems; and
- our ability to accurately predict and develop our products to meet industry standards.

We cannot assure you that our expenditures for research and development will result in the introduction of new products or, if such products are introduced, that those products will achieve sufficient market acceptance or to generate sales to offset the costs of development. Our failure to address rapid technological changes in our markets could adversely affect our business and results of operations.

If our goodwill or intangible assets become impaired, we may be required to record a significant charge to earnings.

Under accounting principles generally accepted in the United States, we review our intangible assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Goodwill is required to be tested for impairment at least annually. Factors that may be considered in determining whether a change in circumstances indicating that the carrying value of our goodwill or other intangible assets may not be recoverable include declines in our stock price and market capitalization or future cash flows projections. A decline in our stock price, or any other adverse change in market conditions, particularly if such change has the effect of changing one of the critical assumptions or estimates we used to calculate the estimated fair value of our reporting units, could result in a change to the estimation of fair value that could result in an impairment charge. Any such material charges, whether related to goodwill or purchased intangible assets, may have a material negative impact on our financial and operating results.

If we fail to maintain an effective system of disclosure controls and internal control over financial reporting, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.

As a public company, we are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, the Sarbanes-Oxley Act of 2002, as amended ("the Sarbanes-Oxley Act"), and Nasdaq listing requirements. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. In order to maintain and improve the effectiveness of our disclosure controls and procedures and internal control over financial reporting, we have expended, and anticipate that we will continue to expend, significant resources, including accounting-related costs and significant management oversight.

Any failure to develop or maintain effective controls, or any difficulties encountered in their implementation or improvement, could delay the reporting of our financial results or cause us to be subject to investigations, enforcement actions by regulatory agencies, stockholder lawsuits, or other adverse actions requiring us to incur defense costs or pay fines, settlements, or

judgments. Any such failures or difficulties could also cause investors to lose confidence in our reported financial and other information, which would likely have a negative effect on the trading price of our common stock. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on the Nasdaq Stock Market.

Risks Relating to Our Capital Stock

The trading prices for our securities have been volatile in the past and may be volatile in the future.

The trading prices for our common stock on the Nasdaq Global Select Market Composite varied between a high of \$75.23 per share and a low of \$50.14 per share in the fiscal year ended June 30, 2022. Likewise, the trading prices of our Mandatory Convertible Preferred Stock varied between a high of \$308.50 per share and a low of \$215.02 per share in the fiscal year ended June 30, 2022. The market prices of our securities could fluctuate significantly for many reasons, including the following:

- future announcements concerning us or our competitors;
- the overall performance of equity markets;
- the trading volume of our securities;
- additions or changes to our board of directors, management, or key personnel;
- regulatory actions (including, but not limited to, developments in international trade policy) and enforcement actions bearing on manufacturing, development, marketing, or sales;
- the commencement or outcome of litigation;
- reports and recommendations of analysts and whether or not we meet the milestones, metrics, and other expectations set forth in such reports;
- gaining or losing large customers;
- the introduction of new products or services and market acceptance of such products or services;
- fluctuations in demand for our products or downturns in the industries that we serve, particularly the continued build-out of the capacity for the manufacture of OLED and the increased use of the installed base of our products in such manufacturing;
- the impact of any public health crisis on our business, financial condition, results of operations, or prospects or those of our customers and suppliers;
- the acquisition or loss of significant manufacturers, distributors, or suppliers or an inability to obtain sufficient quantities of materials needed to provide our services;
- the issuance of common stock or other securities (including shares of common stock issued upon conversion of any shares of Mandatory Convertible Preferred Stock or Series B Preferred Stock or upon conversion of our outstanding convertible notes);
- incurrence of indebtedness;
- quarterly variations in operating results;
- our ability to accurately forecast future performance;
- business acquisitions or divestitures;
- fluctuations in the economy, political events, or general market conditions; and
- changes in our operating industry generally.

In addition, stock markets have experienced extreme price and volume fluctuations in recent years, including as a result of the effects of the COVID-19 pandemic. Moreover, these fluctuations frequently have been unrelated to the operating performance or underlying fundamentals of the affected companies. These broad market fluctuations may adversely affect the market price of our common stock. These fluctuations may be unrelated to our performance or out of our control, and could lead to securities class action litigation that could result in substantial expenses and diversion of management's attention and corporate resources, any or all of which could adversely affect our business, financial condition, and results of operations.

We expect that the market price of our Mandatory Convertible Preferred Stock will be influenced by yield and interest rates in the capital markets, the time remaining to the mandatory conversion date applicable to the Mandatory Convertible Preferred Stock, our creditworthiness, and the occurrence of certain events affecting us that do not require an adjustment to the fixed conversion rates of the Mandatory Convertible Preferred Stock. Fluctuations in yield rates in particular may give rise to arbitrage opportunities based upon changes in the relative values of the Mandatory Convertible Preferred Stock and our common stock. Any such arbitrage could, in turn, affect the market prices of our common stock and the Mandatory Convertible Preferred Stock. The market price of our common stock could also be affected by possible sales of our common stock by investors who view the Mandatory Convertible Preferred Stock as a more attractive means of equity participation in us and by hedging or arbitrage trading activity that we expect to develop involving our common stock. This trading activity could, in turn, affect the market price of the Mandatory Convertible Preferred Stock.

Provisions in our Amended and Restated Articles of Incorporation and Amended and Restated Bylaws and the Pennsylvania Business Corporation Law may delay or prevent our acquisition by a third party, which could also reduce the market price of our capital stock.

Our Articles of Incorporation and Bylaws contain provisions that could make us a less attractive target for a hostile takeover and could make more difficult or discourage a merger proposal, a tender offer, or a proxy contest. Such provisions include:

- a requirement that shareholder-nominated director nominees be nominated in advance of the meeting at which directors are elected and that specific information be provided in connection with such nomination;
- the ability of our board of directors to issue additional shares of common stock or preferred stock without shareholder approval; and
- certain provisions requiring supermajority approval (at least two-thirds of the votes cast by all shareholders entitled to vote thereon, voting together as a single class).

In addition, the BCL contains provisions that may have the effect of delaying or preventing a change in our control or changes in our management. Many of these provisions are triggered if any person or group acquires, or discloses the intent to acquire, 20% or more of a corporation's voting power, subject to certain exceptions. These provisions:

- provide the other shareholders of the corporation with certain rights against the acquiring group or person;
- prohibit the corporation from engaging in a broad range of business combinations with the acquiring group or person;
- restrict the voting and other rights of the acquiring group or person; and
- provide that certain profits realized by the acquiring group or person from the sale of our equity securities belong to and are recoverable by us.

Regardless of the amount of a person's holdings, if a shareholder or shareholder group (including affiliated persons) would be a party to certain proposed transactions with us or would be treated differently from other shareholders of ours in certain proposed transactions, the BCL requires approval by a majority of votes entitled to be cast by all shareholders other than the interested shareholder or affiliate group, unless the transaction is approved by independent directors or other criteria are satisfied. Furthermore, under the BCL, a "short-form" merger of II-VI cannot be implemented without the consent of our board of directors.

In addition, as permitted by Pennsylvania law, an amendment to our Articles of Incorporation or other corporate action that is approved by shareholders may provide mandatory special treatment for specified groups of nonconsenting shareholders of the same class. For example, an amendment to our Articles of Incorporation or other corporate action may provide that shares of common stock held by designated shareholders of record must be cashed out at a price determined by the Company, subject to applicable dissenters' rights.

Furthermore, the BCL provides that directors, in discharging their duties, may consider, to the extent they deem appropriate, the effects of any action upon shareholders, employees, suppliers, customers, and the communities in which the corporation's offices are located. Directors are not required to consider the interests of shareholders to a greater degree than other constituencies' interests. The BCL expressly provides that directors do not violate their fiduciary duties solely by relying on "poison pills" or the anti-takeover provisions of the BCL. We do not currently have a "poison pill."

All of these provisions may limit the price that investors may be willing to pay for shares of our capital stock.

In addition, certain rights of the holders of the Mandatory Convertible Preferred Stock could make it more difficult or more expensive for a third party to acquire us. For example, if any of certain fundamental changes were to occur on or prior to July 1, 2023, holders of the Mandatory Convertible Preferred Stock may have the right to convert their Mandatory Convertible Preferred Stock, in whole or in part, at an increased conversion rate and will also be entitled to receive a make-whole amount equal to the present value of all remaining dividend payments on their Mandatory Convertible Preferred Stock, as described in the applicable Statement with Respect to Shares governing the Mandatory Convertible Preferred Stock. Likewise, if any of certain fundamental changes were to occur, we or the surviving entity would be required to make an offer to repurchase, at the option and election of the holders thereof, for cash each share of Series B Preferred Stock then outstanding. These features of the Mandatory Convertible Preferred Stock and Series B Preferred Stock could increase the cost of acquiring us or otherwise discourage a third party from acquiring us or removing incumbent management.

We do not currently intend to pay dividends on our common stock, holders will benefit from an investment in our common stock only if it appreciates in value and by the intended anti-dilution actions of our share-buyback program.

We have never declared nor paid dividends on our common stock and do not expect to pay cash dividends on our common stock in the foreseeable future. We currently anticipate that we will retain future earnings to support operations and to finance the development of our business. As a result, the success of an investment in our common stock will depend entirely upon future appreciation in its value. There is no guarantee that our common stock will maintain its value or appreciate in value.

Our ability to declare and pay dividends on our capital stock may be limited, including by the terms of our existing Credit Agreement.

Our declaration and payment of dividends on our capital stock in the future will be determined by our board of directors (or an authorized committee thereof) in its sole discretion and will depend on our financial condition, earnings, growth prospects, other uses of cash, funding requirements, applicable Pennsylvania law, and other factors our board of directors deems relevant.

The terms of the New Credit Agreement contain a restriction on our ability to pay cash dividends on our capital stock. If the terms of the New Credit Agreement restrict our ability to pay cash dividends on the Mandatory Convertible Preferred Stock, we will pay any dividends declared by our board of directors (or an authorized committee thereof) on the Mandatory Convertible Preferred Stock in the form of shares of common stock. In addition, credit facilities, indentures, or other financing agreements that we enter into in the future may contain provisions that restrict or prohibit our ability to pay cash dividends on our capital stock.

In addition, under Pennsylvania law, our board of directors may not pay dividends if after giving effect to the relevant dividend payment we (i) would not be able to pay our debts as they become due in the usual course of our business or (ii) our total assets would not be greater than or equal to the sum of our total liabilities plus the amount that would be needed if we were to be dissolved at the time as of which the dividend is measured, in order to satisfy the preferential rights upon dissolution of shareholders whose preferential rights are superior to those receiving the dividend. Even if we are permitted under our contractual obligations and Pennsylvania law to pay cash dividends on the Mandatory Convertible Preferred Stock, we may not have sufficient cash to pay cash dividends on the Mandatory Convertible Preferred Stock.

Trading in preferred stock that we have issued may adversely affect the market price of our common stock.

The market price of our common stock is likely to be influenced by the Mandatory Convertible Preferred Stock and, to the extent that markets develop when applicable trading limitations no longer apply, our Series B Preferred Stock. For example, the market price of our common stock could become more volatile and could depress possible sales of our common stock to shareholders who view the Mandatory Convertible Preferred Stock or Series B Preferred Stock as more attractive means of equity participation in us than owning shares of our common stock.

Our common stock is subordinate to our existing and future indebtedness; the Mandatory Convertible Preferred Stock and Series B Preferred Stock; and any other preferred stock we may issue in the future. Our Mandatory Convertible Preferred Stock and Series B Preferred Stock rank junior to all of our and our subsidiaries' consolidated liabilities.

Shares of our common stock are equity interests that rank junior to all indebtedness and other non-equity claims on us with respect to assets available to satisfy our claims, including in a liquidation of the Company. Additionally, holders of our common stock may be subject to prior dividend and liquidation rights of any holders of our preferred stock or depositary shares representing such preferred stock then outstanding.

Our common stock ranks junior to our Mandatory Convertible Preferred Stock and Series B Preferred Stock with respect to the payment of dividends and amounts payable in the event of our liquidation, dissolution, or winding-up of our affairs. This means that, unless accumulated dividends have been paid on all the Mandatory Convertible Preferred Stock and Series B Preferred Stock then outstanding through the most recently completed dividend period, no dividends may be declared or paid on our common stock and we will not be permitted to repurchase any of our common stock, subject to limited exceptions. Likewise, in the event of our voluntary or involuntary liquidation, dissolution, or winding-up of our affairs, no distribution of our assets may be made to holders of our common stock until we have paid to holders of the Mandatory Convertible Preferred Stock and Series B Preferred Stock then outstanding the applicable liquidation preferences.

In the event of a bankruptcy, liquidation, dissolution, or winding-up of our affairs, our assets will be available to pay obligations on the Mandatory Convertible Preferred Stock and Series B Preferred Stock only after all of our consolidated liabilities have been paid. In addition, the Mandatory Convertible Preferred Stock and Series B Preferred Stock rank structurally junior to all existing and future liabilities of our subsidiaries. In the event of a bankruptcy, liquidation, dissolution, or winding-up of our affairs, there may not be sufficient assets remaining, after paying our and our subsidiaries' liabilities, to pay amounts due on any or all of the Mandatory Convertible Preferred Stock and Series B Preferred Stock then outstanding.

Our board of directors can issue, without approval of the holders of our common stock, preferred stock with voting and conversion rights that could adversely affect the voting power of the holders of our common stock, the rights of holders of shares of our capital stock, or the market price of our capital stock.

Our Articles of Incorporation authorize our board of directors to issue one or more additional series of preferred stock and set the terms of the preferred stock without seeking any further approval from our shareholders. Any preferred stock that is issued will rank ahead of our common stock in terms of dividends and liquidation rights. If we issue additional preferred stock, it may adversely affect the market price of our common stock. Our board of directors also has the power, without shareholder approval, subject to applicable law, to set the terms of any such series of preferred stock that may be issued, including voting

rights, dividend rights, preferences over our common stock with respect to dividends, and other terms, or upon our liquidation, dissolution, or winding-up of our affairs. If we issue additional preferred stock in the future that has a preference over our common stock with respect to the payment of dividends or upon our liquidation, dissolution, or winding-up of our affairs, or if we issue additional preferred stock with voting rights that dilute the voting power of our common stock, the rights of holders of our capital stock or the market price of our capital stock could be adversely affected. The issuance of preferred stock or even the ability to issue preferred stock could also have the effect of delaying, deterring, or preventing a change of control or other corporate action.

The redemption rights of the holders of Series B Preferred Stock may result in the use of our cash in such a way that could adversely affect our business, financial condition or results of operations.

At any time on or after the ten-year anniversary of the applicable issuance date of the shares of our Series B Preferred Stock and subject to the procedures set forth in the terms of the Series B Preferred Stock, each holder of such shares will have the right to require us to redeem all of such holder's shares for cash at a price per share equal to the sum of the applicable stated value for such shares plus accrued or declared and unpaid dividends on such shares that had not previously been added to such stated value. This may have the effect of reducing funds available for working capital, capital expenditures, acquisitions and other general corporate purposes, thereby negatively affecting the interests of holders of our other capital stock, including our common stock and our Mandatory Convertible Preferred Stock.

Holders of our Series B Preferred Stock can exercise significant control over us, which could limit the ability of holders of our other capital stock to influence the outcome of key transactions, including a change of control.

Our Series B Preferred Stock has voting rights, allowing holders to vote as one class with our common stock on an as-converted basis, subject to limited exceptions. As a result, the holders of Series B Preferred Stock have the ability to significantly influence the outcome of any matter submitted for the vote of the holders of our common stock. Holders of Series B Preferred Stock are entitled to act separately in their own respective interests with respect to their ownership interests in us and have the ability to substantially influence all matters that require approval by our shareholders, including the approval of significant corporate transactions. Additionally, we may not undertake certain actions without the prior written approval of the holders of a majority of the issued and outstanding shares of Series B Preferred Stock, voting separately from our common stock. Subject to certain exceptions, we must not: (1) alter or change the rights, preferences or privileges of our Series B Preferred Stock or amend, modify or supplement any provision of our organizational documents in a manner that adversely affects the rights, powers, preferences or privileges of our Series B Preferred Stock; (2) authorize or issue any senior stock (or securities convertible into senior stock), or amend or alter our articles of incorporation to increase the number of authorized or issued shares of our Series B Preferred Stock; (3) decrease the number of authorized shares of our Series B Preferred Stock (other than as permitted pursuant to a conversion, redemption or repurchase by us thereof); (4) issue any shares of our Series B Preferred Stock (other than pursuant to the amended and restated invested agreement, entered into on March 30, 2021, by and between Bain Capital Private Equity, LP ("BCPE") and us (the "Investment Agreement"); and (5) effect any voluntary deregistration or delisting with Nasdaq of our common stock.

Furthermore, we may not, unless holders of Series B Preferred Stock otherwise consent in writing (or if such action is taken with respect to a Permitted Issuance (as defined in the Investment Agreement)), so long as BCPE owns at least 5% of the number of shares of Series B Preferred Stock that it held immediately following the issuance and sale of the Series B-2 Preferred Stock upon completion of our acquisition of Coherent, (i) authorize or issue any parity stock and (ii) pay any cash dividend on our common stock (other than ordinary dividends). We also may not, unless BCPE otherwise consents in writing (or if such action is taken with respect to a Permitted Issuance (as defined in the Investment Agreement)), so long as it owns at least 25% of the number of shares of Series B Preferred Stock that it held immediately following the issuance and sale of the Series B-2 Preferred Stock upon completion of our acquisition of Coherent, redeem, repurchase or otherwise acquire (or make or declare any dividend or distribution in respect of) any junior stock (subject to certain exceptions, including, among other things, ordinary dividends, non-cash dividends or other distributions paid pro rata to all holders of our common stock and, if applicable, holders of Series B Preferred Stock, repurchases of junior stock of up to \$100 million on an aggregate annual basis and dividends on junior stock in kind or in the form of other junior securities or securities convertible into or exchange for such junior securities). Moreover, under the terms of the Investment Agreement, following the closing of the initial investment and for so long as BCPE beneficially owns shares of Series B Preferred Stock (or shares of our common stock issued upon the conversion thereof) that represent, in the aggregate and on an as-converted basis, at least 25% of the number of shares of Series B Preferred Stock that it held immediately following the completion of the issuance and sale of the Series B-2 Preferred Stock upon completion of our acquisition of Coherent, BCPE will have the right to nominate one designee and to designate one observer to the our board of directors. Circumstances may occur in which the interests of BCPE could conflict with the interests of holders of other outstanding capital stock, including our common stock and our Mandatory Convertible Preferred Stock.

Reports published by securities or industry analysts, freelance bloggers and credit rating agencies, including projections in those reports that exceed our actual results, could adversely affect our share price and trading volume.

Research analysts and freelance bloggers publish their own quarterly projections regarding our operating results. These projections may vary widely from one another and may not accurately predict the results we actually achieve. Our share price may decline if we fail to meet securities research analysts' projections. Similarly, if one or more of the analysts who cover us change their recommendations regarding our common stock or publish inaccurate or unfavorable research about our business, our share price could decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, our share price or trading volume could decline.

Regulatory actions may adversely affect the trading price and liquidity of the Mandatory Convertible Preferred Stock.

Holders of Mandatory Convertible Preferred Stock who employ, or seek to employ, a convertible arbitrage strategy with respect to the Mandatory Convertible Preferred Stock may be adversely impacted by regulatory developments that may limit or restrict such a strategy. The SEC and other regulatory and self-regulatory authorities have implemented various rules and may adopt additional rules in the future that restrict and otherwise regulate short selling, over-the-counter swaps, and security-based swaps, which restrictions and regulations may adversely affect the ability of investors in, or potential purchasers of, the Mandatory Convertible Preferred Stock to conduct a convertible arbitrage strategy with respect to the Mandatory Convertible Preferred Stock. This could, in turn, adversely affect the trading price and liquidity of the Mandatory Convertible Preferred Stock.

Holders of Mandatory Convertible Preferred Stock have no voting rights with respect to the Mandatory Convertible Preferred Stock, except under limited circumstances.

Holders of Mandatory Convertible Preferred Stock have no voting rights with respect to the Mandatory Convertible Preferred Stock, except with respect to certain amendments to the terms of the Mandatory Convertible Preferred Stock, in the case of certain dividend arrearages, in certain other limited circumstances, and except as specifically required by applicable Pennsylvania law or by our amended and restated Articles of Incorporation. Holders of Mandatory Convertible Preferred Stock have no right to vote for any members of our board of directors, except in the case of certain dividend arrearages.

If dividends on any Mandatory Convertible Preferred Stock have not been declared and paid for the equivalent of six or more dividend periods, whether or not for consecutive dividend periods, the holders of such Mandatory Convertible Preferred Stock, voting together as a single class with holders of all other series of preferred stock ranking equally with the Mandatory Convertible Preferred Stock and having similar voting rights, will be entitled at our next special or annual meeting of shareholders to vote for the election of a total of two additional members of our board of directors, subject to certain limitations.

We depend on our subsidiaries for cash to fund our operations and expenses, including future dividend payments with respect to our outstanding preferred stock.

A significant portion of our operations is conducted through our subsidiaries, and our ability to generate cash to meet our debt service obligations or to make future dividend payments with respect to the Mandatory Convertible Preferred Stock and, to the extent we elect to make such payments in cash, our Series B Preferred Stock is highly dependent on the earnings and the receipt of funds from our subsidiaries. Our subsidiaries are separate legal entities that have no obligation to make any funds available to us, whether by dividends, loans, or other payments.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

Item 2. PROPERTIES

Information regarding our principal U.S. properties at June 30, 2022, is set forth below:

Location	Primary Use(s)	Primary Business Segment(s)	Approximate Square Footage	Ownership
Sherman, TX	Manufacturing	Compound Semiconductors	700,000	Owned
Easton, PA	Manufacturing and Research and Development	Compound Semiconductors	281,000	Leased
Saxonburg, PA	Manufacturing and Research and Development	Compound Semiconductors	235,000	Owned and Leased
Warren, NJ	Manufacturing and Research and Development	Compound Semiconductors	159,000	Leased
Newark, DE	Manufacturing and Research and Development	Compound Semiconductors	135,000	Leased
Fremont, CA	Manufacturing and Research and Development	Compound Semiconductors	128,000	Leased
Murrieta, CA	Manufacturing and Research and Development	Compound Semiconductors	108,000	Leased

Information regarding our principal foreign properties at June 30, 2022, is set forth below:

Location	Primary Use(s)	Primary Business Segment(s)	Approximate Square Footage	Ownership
China	Manufacturing, Research and Development, and Distribution	Compound Semiconductors and Photonic Solutions	2,991,000	Owned and Leased
Malaysia	Manufacturing	Photonic Solutions	640,000	Owned
United Kingdom	Manufacturing, Research and Development	Compound Semiconductors and Photonic Solutions	319,000	Owned and Leased
Philippines	Manufacturing	Compound Semiconductors	318,000	Leased
Vietnam	Manufacturing	Compound Semiconductors and Photonic Solutions	211,000	Owned and Leased
Switzerland	Manufacturing, Research and Development, and Distribution	Compound Semiconductors	112,000	Leased
Germany	Manufacturing and Distribution	Compound Semiconductors and Photonic Solutions	110,000	Owned and Leased

The square footage listed for each of the above properties represents facility square footage, except in the case of the Philippines location, which includes land.

Item 3. LEGAL PROCEEDINGS

The Company and its subsidiaries are involved in various claims and lawsuits incidental to its business. The resolution of each of these matters is subject to various uncertainties, and it is possible that these matters may be resolved unfavorably to the Company. Management believes, after consulting with legal counsel, that the ultimate liabilities, if any, resulting from such legal proceedings will not materially affect the Company's financial condition, liquidity, or results of operations.

Item 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

Item 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

The Company's common stock is traded on the Nasdaq Global Select Market under the symbol "IIVI." As of August 24, 2022, there were approximately 860 holders of record of our common stock. The Company historically has not paid cash dividends on its common stock and does not presently anticipate paying cash dividends on its common stock in the future.

Dividends on the Company's Series A Mandatory Convertible Preferred Stock will be payable on a cumulative basis when, as and if declared by our board of directors, or an authorized committee of our board of directors, at an annual rate of 6% of the liquidation preference of \$200.00 per share. The Company may pay declared dividends on the Mandatory Convertible Preferred Stock in cash or, subject to certain limitations, in shares of our common stock or in any combination of cash and shares of our common stock on January 1, April 1, July 1 and October 1 of each year, commencing on October 1, 2020 and ending on, and including, July 1, 2023.

Dividends on the Company's Series B Convertible Preferred Stock will be payable on a cumulative basis when, as and if declared by our board of directors, or an authorized committee of our board of directors, at an annual rate of 5%, subject to increase if II-VI defaults on payment obligation with respect to these shares, not to exceed 14% per annum. Until the fourth anniversary of the issuance of the Series B Convertible Preferred Stock, dividends are payable solely in-kind. After the fourth anniversary, dividends are payable, at the Company's option, in cash, in-kind or as a combination of both.

ISSUER PURCHASES OF EQUITY SECURITIES

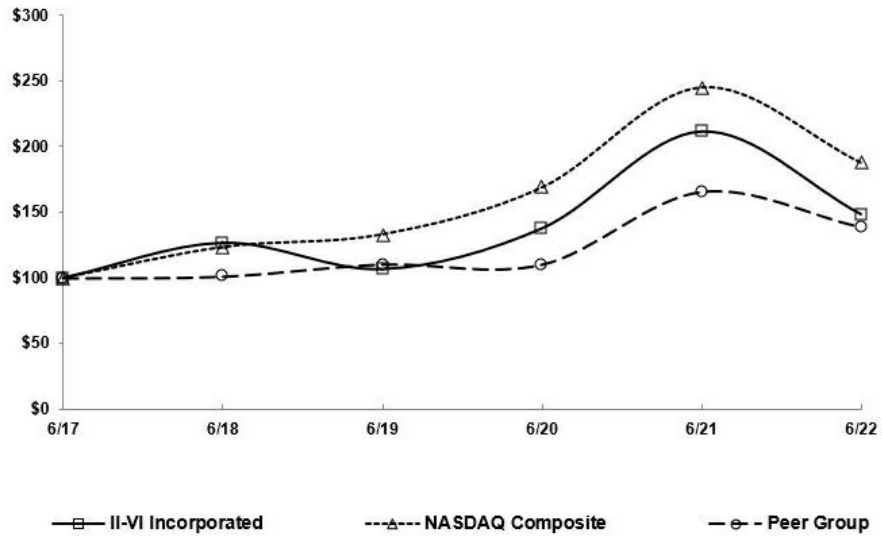
In August 2014, the Company's Board of Directors authorized the Company to purchase up to \$50 million of its common stock through a share repurchase program (the "Program") that calls for shares to be purchased in the open market or in private transactions from time to time. The Program has no expiration and may be suspended or discontinued at any time. Shares purchased by the Company are retained as treasury stock and available for general corporate purposes. The Company did not repurchase shares pursuant to this Program during the fiscal years ended June 30, 2022 or June 30, 2021. As of June 30, 2022, the Company has cumulatively purchased 1,416,587 shares of its common stock pursuant to the Program for approximately \$22 million. The dollar value of shares as of June 30, 2022 that may yet be purchased under the Program is approximately \$28 million.

PERFORMANCE GRAPH

The following graph compares cumulative total shareholder return on the Company's common stock with the cumulative total shareholder return of the Nasdaq Composite Index and with a peer group of companies constructed by the Company for the period from June 30, 2017, through June 30, 2022. The Company's current fiscal year peer group includes CMC Materials Inc., Coherent, Inc., Corning Incorporated, Franklin Electric Co., Inc., Lumentum Holdings Inc., MKS Instruments Inc., and Silicon Laboratories, Inc.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*

Among II-VI Incorporated, the NASDAQ Composite Index,
and a Peer Group



*\$100 invested on 6/30/17 in stock or index, including reinvestment of dividends.
Fiscal year ending June 30.

Item 6. [RESERVED]

Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) is designed to provide a reader of II-VI's financial statements with a narrative from the perspective of management. The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our Consolidated Financial Statements and related notes included under Item 8 of this annual report. II-VI's MD&A is presented in nine sections:

- Forward-Looking Statements
- Overview
- Acquisition and Background of Coherent, Inc.
- Critical Accounting Policies and Estimates
- COVID-19 Update
- Fiscal Year 2022 Compared to Fiscal Year 2021
- Fiscal Year 2021 Compared to Fiscal Year 2020
- Liquidity and Capital Resources
- Off Balance Sheet Arrangements

Forward-looking statements in Item 7 may involve risks and uncertainties that could cause results to differ materially from those projected (refer to Item 1A for discussion of these risks and uncertainties).

Forward-Looking Statements

Certain statements contained in this Management's Discussion and Analysis of Financial Condition and Results of Operations ("Management Discussion and Analysis") are forward-looking statements as defined by Section 21E of the Securities Exchange Act of 1934, as amended, including statements regarding projected growth rates, markets, product development, financial position, capital expenditures and foreign currency exposure. Forward-looking statements are also identified by words such as "expects," "anticipates," "believes," "intends," "plans," "projects" or similar expressions.

Although our management considers these expectations and assumptions to have a reasonable basis, there can be no assurance that management's expectations, beliefs or projections as expressed in the forward-looking statements will actually occur or prove to be correct. In addition to general industry and global economic conditions, factors that could cause actual results to differ materially from those discussed in the forward-looking statements in this Annual Report on Form 10-K include, but are not limited to: (i) the failure of any one or more of the assumptions stated above to prove to be correct; and (ii) the risks relating to forward-looking statements and other "Risk Factors" discussed herein at Item 1A. The Company disclaims any obligation to update information contained in these forward-looking statements whether as a result of new information, future events or developments, or otherwise.

In addition, we operate in a highly competitive and rapidly changing environment; new risk factors can arise, and it is not possible for management to anticipate all such risk factors, or to assess the impact of all such risk factors on our business or the extent to which any individual risk factor, or combination of risk factors, may cause results to differ materially from those contained in any forward-looking statement. The forward-looking statements included in this Annual Report on Form 10-K are based only on information currently available to us and speak only as of the date of this Report. We do not assume any obligation, and do not intend to, update any forward-looking statements, whether as a result of new information, future developments or otherwise, except as may be required by the securities laws. Investors should, however, consult any further disclosures of a forward-looking nature that the Company may make in its subsequent Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, or other disclosures filed with or furnished to the SEC.

Investors should also be aware that, while the Company does communicate with securities analysts from time to time, such communications are conducted in accordance with applicable securities laws. Investors should not assume that the Company agrees with any statement or report issued by any analyst irrespective of the content of the statement or report.

Overview

II-VI Incorporated ("II-VI," the "Company," "we," "us" or "our"), a global leader in materials, networking and lasers, is a vertically integrated manufacturing company that develops, manufactures and markets engineered materials, optoelectronic components and devices, and lasers for use in industrial materials processing, optical communications, aerospace and defense, consumer electronics, semiconductor capital equipment, medical diagnostics and life sciences, automotive applications, machine tools, consumer goods and medical device manufacturing. Headquartered in Saxonburg, Pennsylvania, II-VI has research and development, manufacturing, sales, service, and distribution facilities worldwide. II-VI produces a wide variety of lasers, along with application-specific photonic and electronic materials and components, and deploys them in various forms, including integrated with advanced software to enable its customers.

The Company generates revenues, earnings and cash flows from developing, manufacturing and marketing a broad portfolio of products for our end markets. We also generate revenue, earnings and cash flows from government-funded research and development contracts relating to the development and manufacture of new technologies, materials and products.

Our customer base includes original equipment manufacturers, laser end users, system integrators of high-power lasers, manufacturers of equipment and devices for industrial, optical communications, consumer electronics, security and monitoring applications, U.S. government prime contractors, and various U.S. government agencies.

As we grow, we are focused on scaling our Company and deriving the continued benefits of vertical integration as we strive to be a best in class competitor in all of our highly competitive markets. The Company may elect to change the way in which the Company operates or is organized in the future to enable the most efficient implementation of our strategy.

Acquisition and Background of Coherent, Inc.

Coherent, Inc. ("Coherent"), one of the world's leading providers of laser solutions and optics for microelectronics, life sciences, industrial manufacturing, scientific and aerospace and defense markets, was acquired by II-VI Incorporated on July 1, 2022. In fiscal year 2023, it will be included in the combined company, to be rebranded Coherent Corp., as the Lasers Segment.

Coherent delivers systems to the world's leading brands, innovators, and researchers, all backed with a global service and support network. Since inception in 1966, Coherent has grown through internal expansion and through strategic acquisitions of complementary businesses, technologies, intellectual property, manufacturing processes, and product offerings. Coherent serves important end markets like microelectronics, precision manufacturing, and instrumentation, as well as applications in aerospace and defense.

The word "laser" is an acronym for "light amplification by stimulated emission of radiation." A laser emits an intense coherent beam of light with some unique and highly useful properties. Most importantly, a laser is orders of magnitude brighter than any lamp. As a result of its coherence, the beam can be focused to a very small and intense spot, useful for applications requiring very high power densities including welding and other materials processing procedures. The laser's high spatial resolution is also useful for microscopic imaging and inspection applications. Laser light can be monochromatic—all of the beam energy is confined to a narrow wavelength band. Lasers can produce the lasing action in the form of a gas, liquid, semiconductor, solid state crystal or fiber. Lasers can also be classified by their output wavelength: ultraviolet, visible, infrared or wavelength tunable. Coherent manufactures all of these laser types, in various options such as continuous wave, pulse duration, output power, beam dimensions, etc. Each application has its own specific requirements in terms of laser performance.

Coherent's key laser applications include: semiconductor wafer inspection; manufacturing of advanced printed circuit boards; flat panel display manufacturing; solar cell production; medical and bio-instrumentation; materials processing; metal cutting and welding; industrial process and quality control; marking; imaging and printing; graphic arts and display; and research and development. For example, UV lasers are enabling the continuous move towards miniaturization, which drives innovation and growth in many markets. In addition, the advent of industrial grade ultrafast lasers continues to open up new applications for laser processing.

Coherent's products are manufactured at sites in California, Oregon, Michigan, New Jersey, and Connecticut in the United States; Germany, Scotland, Finland, Sweden, Switzerland, and Spain in Europe; and South Korea, China, Singapore, and Malaysia in Asia. In addition, Coherent also uses contract manufacturers in southeast Asia, Eastern Europe and the United States for the production of certain assemblies and turnkey solutions.

Critical Accounting Policies and Estimates

The preparation of financial statements and related disclosures in conformity with accounting principles generally accepted in the United States requires the Company's management to make judgments, assumptions and estimates that affect the amounts reported in its Consolidated Financial Statements and accompanying notes. Note 1. Nature of Business and Summary of Significant Accounting Policies, of the Notes to our Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K describes the significant accounting policies and accounting methods used in the preparation of the Company's Consolidated Financial Statements. Management bases its estimates on historical experience and on various other assumptions that it believes to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Actual results may differ from these estimates.

Management has discussed the development and selection of the critical accounting policies and estimates described below with the Audit Committee of the Board of Directors and the Audit Committee has reviewed the related disclosure. In addition, there are other items within our Consolidated Financial Statements that require estimation but are not deemed critical. Changes in estimates used in these and other items could impact the Consolidated Financial Statements.

Accounting for Commercial Agreements

From time-to-time, the Company enters into commercial agreements with our customers that include advance payments from our customers, the cash flow from which the Company uses to fund our capital expansion. The Company determines at the inception or modification of the contract if the arrangement is, or contains, a lease, which exists when the contract conveys the right to control the use of identified property or equipment for a period of time in exchange for consideration. In determining if a contract contains a lease, the Company uses judgment to evaluate whether the contract, either explicitly or implicitly, is for the use of an identified asset and whether the customer has the right to direct the use of, and obtain substantially all of the economic benefit from, the identified asset. Determination of the accounting treatment of the contract requires judgment and impacts the amounts recorded in our Consolidated Financial Statements.

The Company entered into a commercial agreement with one of our customers to produce certain engineered materials products within the Compound Semiconductors segment. We received payments of \$23 million and \$8 million during the years ended June 30, 2022 and 2021, respectively, which the Company used to partially fund the purchase of plant and equipment, which is recorded as a contract liability. See Note 4. Revenue from Contracts with Customers of the Notes to our Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K. We determined the contractual rights and obligations in the commercial agreement provide us with the substantive right to substitute alternative assets throughout the period of use and therefore the commercial agreement does not contain a lease under ASC 842.

Goodwill

The Company tests goodwill for impairment annually, and when events or changes in circumstances indicate that goodwill might be impaired. The determination of whether goodwill is impaired requires us to make judgments based on long-term projections of future performance. Estimates of fair value are based on our projection of revenues, operating costs and cash flows of each reporting unit, considering historical and anticipated results and general economic and market conditions and their projections. For fiscal year 2022, the fair values of the reporting units were determined using a discounted cash flow analysis with projected financial information based on our most recently completed long-term strategic planning processes and also considers the current financial performance compared to our prior projections of the reporting units, as well as a market analysis. As of June 30, 2022, no reporting units are at risk for impairment. Due to the cyclical nature of our business, and the other factors described in the section on Risk Factors set forth in Item 1A of this Annual Report on Form 10-K, the profitability of our individual reporting units may periodically be affected by downturns in customer demand, operational challenges and other factors. If material adverse conditions occur that impact one or both of our reporting units, our determination of future fair value might not support the carrying amount of one or both of our reporting units, and the related goodwill would need to be impaired.

Income Taxes

The Company prepares and files tax returns based on its interpretation of tax laws and regulations and records estimates based on these judgments and interpretations. In the normal course of business, the Company's tax returns are subject to examination by various taxing authorities, which may result in future tax, interest and penalty assessments by these authorities. The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such a position are measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate resolution. The amount of unrecognized tax benefits is adjusted for changes in facts and circumstances. For example, adjustments could result from significant amendments to existing tax law and the issuance of regulations or interpretations by the taxing authorities, new information obtained during a tax examination, or resolution of an examination. The Company believes that its estimates for uncertain tax positions are appropriate and sufficient to pay assessments that may result from examinations of its tax returns. The Company recognizes both accrued interest and penalties related to unrecognized tax benefits in income tax expense.

Management evaluates the realizability of deferred tax assets for each jurisdiction in which it operates. If the Company experiences cumulative pretax income in a particular jurisdiction in a three-year period including the current and prior two years, management normally concludes that the income tax assets will more likely than not be realizable and no valuation allowance is recognized, unless known or planned operating developments, or changes in tax laws, would lead management to conclude otherwise. However, if the Company experiences cumulative pretax losses in a particular jurisdiction in a three-year period, management then considers a series of factors in the determination of whether the deferred tax assets can be realized. The Company has recorded valuation allowances against certain of its deferred tax assets, primarily those that have been generated from net operating losses in certain foreign taxing jurisdictions and acquired U.S. carryforwards. In evaluating whether the Company would more likely than not recover these deferred tax assets, it has not assumed any future taxable income or tax planning strategies in the jurisdictions associated with these carryforwards where history does not support such an assumption. Implementation of tax planning strategies to recover these deferred tax assets or future income generation in these jurisdictions could lead to the reversal of these valuation allowances and a reduction of income tax expense.

COVID-19 Update

In response to the global spread of COVID-19, governments at various levels have implemented, and may continue to implement, unprecedented response measures. Overall, the COVID-19 pandemic and related factors have significantly curtailed global economic activity and caused significant volatility and disruption in global financial markets. Certain of the measures taken in response to the COVID-19 pandemic have adversely affected, and could in the future continue to materially adversely impact, our business, results of operations, financial condition and stock price. In particular, the COVID-19 pandemic continues to have a significant impact on global trade, which has resulted in supply chain and production disruptions impacting our business.

In particular, our supply chain has been affected by various measures implemented in response to the pandemic. In certain cases, our suppliers have not had the materials, capacity or capability to supply us with the components necessary for continuing our manufacturing operations or development efforts at our normal levels or on predictable timing. We also have experienced restrictions and delays on logistics, such as those relating to air cargo carriers, as well as increased logistics costs due to limited capacity and high demands for freight forwarders. As a result of these factors, we have increased our inventory of certain items to mitigate these logistical uncertainties. Similarly, our customers have also experienced, and could continue to experience, disruptions in their operations, which may result in reduced, delayed, or canceled orders, and have increased collection risks, which may adversely affect our results of operations.

The full extent of the impact of the COVID-19 pandemic and the related responses on our operational and financial performance remains uncertain and will depend on many factors outside our control, including, without limitation, the duration and severity of the pandemic, the imposition of protective public safety measures, and the impact of the pandemic and related factors on the global economy as a whole and, in particular, demand for our products. Due to these uncertainties, we cannot reasonably estimate the related impact on us at this time.

For additional information regarding the risks that we face as a result of the COVID-19 pandemic, please see Item 1A. Risk Factors in Part I of this Annual Report on Form 10-K. Further, to the extent that the COVID-19 pandemic adversely affects our business and financial results, it also may have the effect of heightening many of the other risks described in the risk factors in Item 1A of this Annual Report on Form 10-K.

Fiscal Year 2022 Compared to Fiscal Year 2021

As of June 30, 2022, the Company was aligned along the following two reporting segments for the purpose of making operational decisions and assessing financial performance: (i) Compound Semiconductors and (ii) Photonic Solutions. The Company is reporting financial information (revenue and operating income) for these reporting segments in this Annual Report on Form 10-K.

We previously classified intangible asset amortization expense within Selling, general and administrative (“SG&A”) expenses in our Consolidated Statements of Earnings (Loss). Amortization expense on the developed technology intangible assets is now classified within Cost of goods sold, with amortization expense on customer lists and trade names remaining within SG&A expenses in our Consolidated Statements of Earnings. Prior period amounts have been conformed to the current period presentation, which resulted in an increase to Cost of goods sold and a decrease to SG&A expenses of \$39 million for the year ended June 30, 2021.

The following table sets forth select items from our Consolidated Statements of Earnings (Loss) for the years ended June 30, 2022 and 2021 (\$ in millions except per share information):

	Year Ended June 30, 2022		Year Ended June 30, 2021	
		% of Revenues		% of Revenues
Total revenues	\$ 3,317	100 %	\$ 3,106	100 %
Cost of goods sold	2,051	62	1,928	62
Gross margin	1,265	38	1,177	38
Operating expenses:				
Internal research and development	377	11	330	11
Selling, general and administrative	474	14	445	14
Interest and other, net	132	4	50	2
Earnings before income taxes	282	8	353	11
Income taxes	47	1	55	2
Net earnings	\$ 235	7 %	\$ 298	10 %
Diluted earnings per share	\$ 1.45		\$ 2.37	

Consolidated

Revenues. Revenues for the year ended June 30, 2022 increased 7% to \$3,317 million, compared to \$3,106 million for the prior fiscal year. The biggest driver of increased revenue was strength in the communications market, which grew by 7% year-over-year, contributing an incremental \$151 million in sales. The strength in the communications market was due to strong demand in datacom and transceivers, specifically for transceivers with data rates greater than 100G. In addition, semiconductor capital equipment sales grew 29% and industrial sales grew 26% compared to the same period last year, with an additional \$34 million and \$85 million in incremental revenue, respectively. This growth was partially offset by decreased revenue in the consumer market, which fell 20%, or \$56 million, year-over-year due to lower sales in 3D sensing.

Gross margin. Gross margin for the year ended June 30, 2022 was \$1,265 million, or 38%, of total revenues, compared to \$1,177 million, or 38% of total revenues, for the same period last fiscal year. Gross margin as a percentage of revenues increased 20 basis points compared to the prior fiscal year.

Internal research and development. Internal research and development (“IR&D”) expenses for the fiscal year ended June 30, 2022 were \$377 million, or 11% of revenues, compared to \$330 million, or 11% of revenues, last fiscal year. The IR&D expenses are primarily related to the Company’s continued investment in new products and manufacturing processes across all its businesses including significant investments in indium phosphide semiconductor lasers, silicon carbide materials and devices for both power electronics and wireless devices, semiconductor technology, gallium arsenide semiconductor lasers, and silicon carbide semiconductor technology.

Selling, general and administrative. SG&A expenses for the year ended June 30, 2022 were \$474 million, or 14% of revenues, compared to \$445 million, or 14% of revenues, last fiscal year. The Company incurred transaction and integration costs relating to the acquisition of Coherent, which increased \$9 million year-over-year.

Interest and other, net. Interest and other, net for the year ended June 30, 2022 included expense of \$132 million compared to expense of \$50 million last fiscal year, or an increase of \$83 million year over year. Interest and other, net includes \$121 million for interest expense on borrowings, and \$16 million of foreign currency losses. Interest expense of \$121 million incurred in FY22 was related to funding both raised in advance of the closing of the Coherent acquisition, as well as fees for financing to be funded contingent upon the close of the transaction, the combined expense totaling \$79 million.

Foreign currency losses were \$16 million for the year ended June 30, 2022, as compared to \$6 million of losses for the year ended June 30, 2021. The increased foreign currency impact was the result of volatility in the foreign exchange market, particularly in regard to the Euro. The Company purchased \$345 million Euros to pay off the Euro based debt of Coherent at transaction closing, which resulted in a \$24 million realized loss during the year ended June 30, 2022.

Income taxes. The Company's year-to-date effective income tax rate at June 30, 2022 was 17%, compared to an effective tax rate of 16% last fiscal year. The current fiscal year's effective tax rate was lower than statutory rates because of favorable research and development incentives in certain jurisdictions and tax rate differentials between U.S. and foreign jurisdictions.

Segment Reporting

Revenues and operating income for the Company's reportable segments are discussed below. Operating income differs from income from operations in that operating income excludes certain expenses, including interest, the impact of foreign exchange, and other miscellaneous expenses as reported. Management believes operating income to be a useful measure for investors, as it reflects the results of segment performance over which management has direct control, which is used by management in its evaluation of segment performance. See Note 14. Segment and Geographic Reporting to the Company's Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K for further information on the Company's reportable segments and for the reconciliation of operating income to net earnings, which is incorporated herein by reference.

Photonic Solutions (\$ in millions)

	Year Ended June 30,		% Increase
	2022	2021	
Revenues	\$ 2,226	\$ 2,038	9 %
Operating income	\$ 230	\$ 208	11 %

Revenues for the year ended June 30, 2022 for Photonic Solutions increased 9% to \$2,226 million, compared to \$2,038 million for last fiscal year. Our transceiver business grew across all product lines including the 200G and 400G modules, an increase of \$152 million year-over-year.

Operating income for the year ended June 30, 2022 for Photonic Solutions increased 11% to \$230 million, compared to an operating income of \$208 million last fiscal year. The drivers of the increased operating income were higher sales volume, and improved operating performance.

Compound Semiconductors (\$ in millions)

	Year Ended June 30,		% Increase
	2022	2021	
Revenues	\$ 1,090	\$ 1,068	2 %
Operating income	\$ 220	\$ 221	— %

Revenues for the fiscal year ended June 30, 2022 for Compound Semiconductors increased 2% to \$1,090 million, compared to revenues of \$1,068 million last fiscal year. The increase in revenues during the current fiscal year was primarily driven by strong sales in the industrial and semiconductor capital equipment businesses, an increase of \$64 million and \$30 million in comparison to prior year, respectively. This growth was partially offset by a \$56 million decrease in the consumer market.

Operating income for the fiscal year ended June 30, 2022 for Compound Semiconductors remained flat, with operating income of \$220 million in the current year, compared to operating income of \$221 million last fiscal year. The decrease in operating income during the current fiscal year as a percent of revenue was driven by a \$53 million increase in R&D spend in fiscal year 2022 as compared to fiscal year 2021, primarily for SiC materials and devices and InP technology platforms. Additionally, supply chain costs increased year-over-year further driving the decrease in operating income as a percent of revenue.

Fiscal Year 2021 Compared to Fiscal Year 2020

As of June 30, 2021, the Company was aligned along the following two reporting segments for the purpose of making operational decisions and assessing financial performance: (i) Compound Semiconductors and (ii) Photonic Solutions. The Company is reporting financial information (revenue and operating income) for these reporting segments in this Annual Report on Form 10-K.

We previously classified intangible asset amortization expense within SG&A expenses in our Consolidated Statements of Earnings (Loss). Amortization expense on the developed technology intangible assets is now classified within Cost of goods sold, with amortization expense on customer lists and trade names remaining within SG&A expenses in our Consolidated Statements of Earnings (Loss). Prior period amounts have been conformed to the current period presentation, which resulted in an increase to Cost of goods sold and a decrease to SG&A expenses of \$39 million and \$28 million for the years ended June 30, 2021 and June 30, 2020, respectively.

The following table sets forth select items from our Consolidated Statements of Earnings (Loss) for the years ended June 30, 2021 and 2020 (\$ in millions except per share information):

	Year Ended June 30, 2021		Year Ended June 30, 2020	
		% of Revenues		% of Revenues
Total revenues	\$ 3,106	100 %	\$ 2,380	100 %
Cost of goods sold	1,928	62	1,589	67
Gross margin	1,177	38	791	33
Operating expenses:				
Internal research and development	330	11	339	14
Selling, general and administrative	445	14	413	17
Interest and other, net	50	2	103	4
Earnings (loss) before income tax	353	11	(64)	(3)
Income taxes	55	2	3	—
Net earnings (loss)	\$ 298	10 %	\$ (67)	(3) %
Diluted earnings (loss) per share	\$ 2.37		\$ (0.79)	

Consolidated

Revenues. Revenues for the year ended June 30, 2021 increased 30% to \$3,106 million, compared to \$2,380 million for fiscal year 2020. Revenue for 2021 was a record with growth across all end markets compared to the same period in fiscal year 2020. Communications, our largest vertical, grew 30% compared to the same period in the prior year. This increase was due to a full year of Finisar Corporation ("Finisar") revenue, strong demand across transceivers, including 200/400G products, as well as other optical communications products. The strong demand for our 3D sensing products drove 118% growth in revenue for consumer electronics. Life sciences grew 65%, driven by demand for our filters, optics and thermo-electric coolers for COVID-19 related PCR testing and sequencing instrumentation. Our industrial business grew 11% compared to the same period in the prior year, due to strong growth in both "CO 2" and one micron laser components.

Gross margin. Gross margin for the year ended June 30, 2021 was \$1,177 million, or 38%, of total revenues, compared to \$791 million, or 33% of total revenues, for the same period fiscal year 2020. Gross margin as a percentage of revenues increased 470 basis points compared to the prior fiscal year. Gross margin was negatively impacted in the in fiscal year 2020 by the effects of purchase accounting on inventory, an increased value of \$87.7 million related to the fair value adjustment of the acquired Finisar inventory.

Internal research and development. Company-funded IR&D expenses for the fiscal year ended June 30, 2021 were \$330 million, or 11% of revenues, compared to \$339 million, or 14% of revenues, fiscal year 2020. The IR&D expenses were primarily related to the Company continuing to invest in new products and processes across all its businesses including investments in high speed datacom and telecom transceivers, high speed integrated circuits (ICs), 5G technology, 3D sensing,

indium phosphide semiconductor lasers, gallium arsenide semiconductor lasers, silicon carbide semiconductor technology, and other emerging market trends.

Selling, general and administrative. SG&A expenses for the year ended June 30, 2021 were \$445 million, or 14% of revenues, compared to \$413 million, or 17% of revenues, fiscal year 2020. The Company incurred transaction and integration costs relating to the acquisitions of Finisar, Ascatron AB ("Ascatron") and INNOVION Corporation ("Innovion"), the acquisition of Coherent, increased stock compensation due to the increased II-VI stock price, as well as the SG&A from the operations of Ascatron and Innovion.

Interest and other, net. Interest and other, net for the year ended June 30, 2021 was expense of \$50 million compared to expense of \$103 million fiscal year 2020, or a decrease of \$53 million year over year. Interest and other, net primarily includes \$60 million for interest expense on borrowings, and \$6 million of foreign currency losses. The decrease compared to the prior fiscal year was driven by lower levels of debt outstanding, due to the Term Loan B being repaid with funds from the July 2020 equity raise, as well as gains of \$7 million and \$11 million recognized in relation to the Innovion acquisition and the Preferred Series B forward sale agreement, respectively. These gains were offset by \$25 million of debt issuance costs recognized in conjunction with the repayment of the Company's Term Loan B Facility in fiscal 2021.

There were foreign currency losses of \$6 million for the year ended June 30, 2021 due to the volatility in the foreign exchange market, compared to \$8 million of losses for the year ended June 30, 2020.

Income taxes. The Company's year-to-date effective income tax rate at June 30, 2021 was 16%, compared to an effective tax rate of (5)% in the prior fiscal year. The effective tax rate in fiscal year 2021 was lower than statutory rates because of favorable research and development incentives in certain jurisdictions and stock option exercise benefits from the strong II-VI stock price.

Photonic Solutions (\$ in millions)

	Year Ended June 30,		% Increase
	2021	2020	
Revenues	\$ 2,038	\$ 1,537	33 %
Operating income	\$ 208	\$ 50	316 %

The above operating results for the year ended June 30, 2021 include the Company's acquisition of Finisar in September 2019.

Revenues for the year ended June 30, 2021 for Photonic Solutions increased 33% to \$2,038 million, compared to \$1,537 million for fiscal year 2020. The largest driver of the increase was the inclusion of four full fiscal quarters of revenue from Finisar compared to six days and three quarters of revenue in the prior year. Our transceiver business grew across all product lines including the 200G and 400G modules.

Operating income for the year ended June 30, 2021 for Photonic Solutions increased 316% to \$208 million, compared to an operating income of \$50 million for fiscal year 2020. The drivers of the increased operating income were higher sales volume, and improved operating performance and the absence of costs related to purchase accounting that were present in fiscal year 2020.

Compound Semiconductors (\$ in millions)

	Year Ended June 30,		% Increase
	2021	2020	
Revenues	\$ 1,068	\$ 821	30 %
Operating income	\$ 221	\$ 62	255 %

The above operating results for the year ended June 30, 2021 include the Company's acquisition of Finisar in September 2019.

Revenues for the fiscal year ended June 30, 2021 for Compound Semiconductors increased 30% to \$1,068 million, compared to revenues of \$821 million for fiscal year 2020. The increase in revenues during the current fiscal year was primarily driven by over a 100% increase in VCSEL product shipments addressing the 3D sensing consumer market, and increased revenues to customers in all of our other markets with significant growth in our Life Sciences business.

Operating income for the fiscal year ended June 30, 2021 for Compound Semiconductors increased 255% to \$221 million, compared to operating income of \$62 million for fiscal year 2020. The increase in operating income during fiscal year 2021 was primarily driven by product mix and improved absorption of operating costs due to higher volumes and shipping 3D sensing products. In addition, the expenses associated with the fair value inventory write-up and other related acquisition expenses for Finisar did not repeat in fiscal year 2021.

Liquidity and Capital Resources

Historically, our primary sources of cash have been provided from operations, long-term borrowings, sale of our equity securities and advance funding from customers. Our historic uses of cash have been for capital expenditures, investments in research and development, business acquisitions, payments of principal and interest on outstanding debt obligations, payments of debt issuance costs to obtain financing, payments in satisfaction of employees' minimum tax obligations and purchases of treasury stock. Supplemental information pertaining to our sources and uses of cash for the periods indicated is presented as follows:

Sources (uses) of Cash (millions):

Year Ended June 30,	2022	2021	2020
Net cash provided by operating activities	\$ 413	\$ 574	\$ 297
Net proceeds from debt and equity issuances	990	1,611	2,121
Effect of exchange rate changes on cash and cash equivalents and other items	34	22	(12)
Proceeds from exercises of stock options and purchases of stock under employee stock purchase plan	18	32	14
Proceeds from prior credit facility and other borrowings	—	—	10
Common stock repurchases	—	—	(2)
Payments under prior term loan and credit facility	—	—	(177)
Purchases of businesses, net of cash acquired	—	(34)	(1,037)
Other investing and financing	(8)	5	—
Debt issuance costs	(10)	—	(64)
Payment of Finisar Notes	(15)	—	(560)
Payments in satisfaction of employees' minimum tax obligations	(21)	(20)	(29)
Payment of dividends	(35)	(20)	—
Payments under long-term borrowings and credit facility	(62)	(926)	(138)
Additions to property, plant & equipment	(314)	(146)	(137)

Net cash provided by operating activities:

Net cash provided by operating activities was \$413 million during the current fiscal year ended June 30, 2022 compared to \$574 million of cash provided by operating activities during the same period last fiscal year. The decrease in cash flows provided by operating activities during the year ended June 30, 2022 compared to the same period last fiscal year was driven by decreased net earnings of \$63 million in the year ended June 30, 2022 due to increased interest expense. In addition, higher levels of working capital were needed in order to ensure business continuity in the face of supply chain challenges and projected growth.

Net cash provided by operating activities was \$574 million and \$297 million for the fiscal years ended June 30, 2021 and 2020, respectively. The increase in cash flows provided by operating activities during the fiscal year ended June 30, 2021 compared to the fiscal year ended June 30, 2020 was primarily driven by additional net earnings of \$277 million.

Net cash used in investing activities:

Net cash used in investing activities was \$320 million for the fiscal year ended June 30, 2022, compared to net cash used of \$173 million for the same period last fiscal year. Net cash used in investing activities during the current period included \$314 million of capital expenditures to continue to increase capacity to meet the growing demand for the Company's product portfolio.

Net cash used in investing activities was \$173 million and \$1,179 million for the fiscal years ended June 30, 2021 and 2020, respectively. Net cash used in investing activities during the fiscal year ended June 30, 2021 primarily included \$34 million for

net cash paid for the acquisition of Ascatron and Innovion and \$146 million of cash expenditures to continue to increase capacity to meet the growing demand for the Company's product portfolio. Net cash used in investing activities during the fiscal year ended June 30, 2020 primarily included \$1,037 million for net cash paid for the acquisition of Finisar.

Net cash provided by financing activities:

Net cash provided by financing activities was \$863 million for the fiscal year ended June 30, 2022, compared to net cash provided by financing activities of \$676 million for the same period last fiscal year. Net cash provided by financing activities was driven by \$980 million of net proceeds from the Company's issuance of 5.000% Senior Notes due 2029, issued in December 2021, partially offset by cash used to repay borrowings and Series A dividends, of \$62 million and \$35 million, respectively.

Net cash provided by financing activities was \$676 million for the year ended June 30, 2021 compared to net cash provided by financing activities of \$1,174 million for the year ended June 30, 2020. Net cash provided by financing activities during the fiscal year ended June 30, 2021 was primarily impacted by \$1,611 million of net proceeds from the Company's underwritten public offering in July 2020 as well as the issuance of the Series B Preferred Stock in March 2021, offset by cash used to repay borrowings of \$926 million.

Senior Credit Facilities as of June 30, 2022

The Company had Senior Credit Facilities with Bank of America, N.A., as Administrative Agent, Swing Line Lender and an L/C Issuer, and the other lenders party thereto.

The credit agreement governing the Senior Credit Facilities (the "Credit Agreement") provides for senior secured financing of \$2.4 billion in the aggregate, consisting of

- (i) Aggregate principal amount of \$1,255 million for a five-year senior secured first-lien term A loan facility (the "Term A Facility"),
- (ii) Aggregate principal amount of \$720 million for a seven-year senior secured term B loan facility (the "Term B Facility" and together with the Term A Facility, the "Term Loan Facilities"), which was repaid in full during the quarter ended September 30, 2020, and
- (iii) Aggregate principal amount of \$450 million for a five-year senior secured first-lien revolving credit facility (the "Revolving Credit Facility" and together with the Term Loan Facilities, the "Senior Credit Facilities").

On July 1, 2022, the Credit Agreement was terminated, and amounts borrowed under the Term A Facility were repaid in full using proceeds from the New Term Facilities (defined below).

Funding of Coherent Acquisition on July 1, 2022

The Company funded amounts payable in connection with the Merger with the proceeds of the loans borrowed under the New Term Facilities (as defined below) on the closing date of the Merger, together with other financing sources (including the net proceeds from the issuance and sale of the Company's previously issued 5.000% Senior Notes due 2029) and cash on hand. In particular, cash from these sources was used to fund (i) the cash consideration payable in connection with the Coherent Merger, (ii) the repayment in full of the Senior Credit Facilities (as defined above), and Coherent's credit agreement, dated as of November 7, 2016, as amended, and (iii) certain fees and expenses in connection with the Coherent Merger. The net cash outflow on July 1, 2022 to complete the funding of the Merger was \$2.1 billion.

New Senior Credit Facilities

As of December 10, 2021, a new term loan A credit facility (the "New Term A Facility") in an aggregate principal amount of \$850 million a new term loan B credit facility (the "New Term B Facility") and, together with the New Term A Facility, the "New Term Facilities") in an aggregate principal amount of \$2,800 million, and a new revolving credit facility (the "New Revolving Credit Facility") in an aggregate principal amount of \$350 million, were fully priced and allocated. The New Term Facilities were funded concurrently with the closing of the Merger. The New Revolving Credit Facility also became available concurrently with the closing of the Merger. The New Term A Facility and the New Revolving Credit Facility will each bear interest at LIBOR subject to a 0.00% floor plus a range of 1.75% to 2.50%, based on the Company's total net leverage ratio. The New Term A Facility and the New Revolving Credit Facility borrowings are initially expected to bear interest at LIBOR plus 2.00%. The New Term B Facility will bear interest at LIBOR (subject to a 0.50% floor) plus 2.75%. In relation to the New Term B Facility, the Company incurred expense of \$34 million in the year ended June 30, 2022, which is included in interest expense in the Consolidated Statements of Earnings (Loss). The definitive documentation for the New Term Facilities and the New Revolving Credit Facility include customary LIBOR replacement provisions.

As of August 1, 2022, the Company had no amount outstanding under the New Revolving Credit Facility.

5.000% Senior Notes due 2029

On December 10, 2021, the Company issued \$990 million aggregate principal amount of 5.000% Senior Notes due 2029 (the "Senior Notes") pursuant to the indenture, dated as of December 10, 2021 (the "Indenture"), between the Company and U.S. Bank National Association, as trustee (the "Trustee"). The Senior Notes are guaranteed by each of the Company's domestic subsidiaries that guarantee its obligations under the Senior Credit Facilities. Interest on the Senior Notes will be payable on December 15 and June 15 of each year, commencing on June 15, 2022, at a rate of 5.000% per annum. The Senior Notes will mature on December 15, 2029.

The Company used the proceeds from the offering of the Senior Notes, together with other financing sources (including the New Term Facilities and cash on hand), to fund the cash consideration, the repayment of certain indebtedness and certain fees and expenses in connection with the Merger.

On or after December 15, 2024, the Company may redeem the Senior Notes, in whole at any time or in part from time to time, at the redemption prices set forth in the Indenture, plus accrued and unpaid interest, if any, to, but excluding, the applicable redemption date. In addition, at any time prior to December 15, 2024, the Company may redeem the Senior Notes, at its option, in whole at any time or in part from time to time, at a redemption price equal to 100% of the principal amount of the Senior Notes redeemed, plus a "make-whole" premium set forth in the Indenture, plus accrued and unpaid interest, if any, to, but excluding, the applicable redemption date. Notwithstanding the foregoing, at any time and from time to time prior to December 15, 2024, the Company may redeem up to 40% of the aggregate principal amount of the Senior Notes using the proceeds of certain equity offerings as set forth in the Indenture, at a redemption price equal to 105.000% of the principal amount thereof, plus accrued and unpaid interest, if any, to, but excluding, the applicable redemption date.

The Indenture contains customary covenants and events of default, including default relating to among other things, payment default, failure to comply with covenants or agreements contained in the Indenture or the Senior Notes and certain provisions related to bankruptcy events. As of June 30, 2022, the Company was in compliance with all covenants under the Indenture.

0.25% Convertible Senior Notes

In August 2017, the Company issued and sold \$345 million aggregate principal amount of the II-VI Convertible Notes in a private placement to qualified institutional buyers within the meaning of Rule 144A under the Securities Act of 1933, as amended.

The initial conversion rate is 21.25 shares of II-VI Common Stock per \$1,000 principal amount of II-VI Convertible Notes, which is equivalent to an initial conversion price of \$47.06 per share of II-VI Common Stock. The if-converted value of the II-VI Convertible Notes amounted to \$370 million as of June 30, 2022 and \$532 million as of June 30, 2021 (based on the Company's closing stock price on the last trading day of the fiscal periods then ended).

On or after June 1, 2022 until the close of business on the business day immediately preceding September 1, 2022 (the "Maturity Date"), holders may convert their II-VI Convertible Notes at any time. For conversions occurring on or after June 1, 2022, the Company has delivered or will deliver shares of II-VI Common Stock to settle conversions.

Holders of the II-VI Convertible Notes will not receive any cash payment representing accrued and unpaid interest upon conversion of a II-VI Convertible Note, other than as provided in the governing indenture. Accrued but unpaid interest will be deemed to be paid in full upon conversion rather than cancelled, extinguished or forfeited, other than as provided in the governing indenture. Notes were convertible during three quarters in the year ended June 30, 2022. Because the last reported sale price of II-VI Common Stock for at least 20 trading days during the period of 30 consecutive trading days ending on the last trading day of the year ended June 30, 2022 was equal to or greater than 130% of the applicable conversion price on each applicable trading day, the II-VI Convertible Notes were convertible at the option of the holders thereof during the fiscal period ranging from April 1, 2022 to May 31, 2022. As of June 1, 2022, the II-VI Convertible Notes become convertible regardless of compliance with any other conversion trigger until the close of business on the business day immediately preceding the Maturity Date.

Aggregate Availability

The Company had aggregate availability of \$450 million under its Revolving Credit Facility as of June 30, 2022.

Weighted Average Interest Rate

The weighted average interest rate of total borrowings was 2% and 1% for the years ended June 30, 2022 and 2021, respectively

Our cash position, borrowing capacity and debt obligations are as follows (in millions):

	June 30, 2022	June 30, 2021
Cash, cash equivalents, and restricted cash	\$ 2,582	\$ 1,592
Available borrowing capacity	450	449
Total debt obligations	2,300	1,375

On July 1, 2022 the Company utilized \$2.1 billion of cash, cash equivalents, and restricted cash as part of the funding required to complete the Coherent acquisition. The Company believes existing cash, cash flow from operations, and available borrowing capacity from its New Senior Credit Facilities will be sufficient to fund its needs for working capital, capital expenditures, repayment of scheduled long-term borrowings and lease obligations, investments in internal research and development, and internal and external growth objectives at least through fiscal year 2023. Additionally, the Company expects to settle any future conversions of its II-VI Convertible Notes in shares of common stock. However, the Company may be required to repay in cash any outstanding II-VI Convertible Notes that are not converted prior to the Maturity Date for the II-VI Convertible Notes.

The Company's cash and cash equivalent balances are generated and held in numerous locations throughout the world, including amounts held outside the United States. As of June 30, 2022, the Company held approximately \$332 million of cash and cash equivalents outside of the United States. Cash balances held outside the United States could be repatriated to the United States.

Share Repurchase Program

In August 2014, the Company's Board of Directors authorized the Company to purchase up to \$50 million of its common stock through a share repurchase program (the "Program") that calls for shares to be purchased in the open market or in private transactions from time to time. The Program has no expiration and may be suspended or discontinued at any time. Shares purchased by the Company are retained as treasury stock and available for general corporate purposes. The Company did not repurchase shares pursuant to this Program during the fiscal years ended June 30, 2022 or June 30, 2021. As of June 30, 2022, the Company has cumulatively purchased 1,416,587 shares of its common stock pursuant to the Program for approximately \$22 million. The dollar value of shares as of June 30, 2022 that may yet be purchased under the Program is approximately \$28 million.

Off-Balance Sheet Arrangements

We have no off-balance sheet arrangements as defined by Regulation S-K of the Securities Act of 1933.

Contractual Obligations

As of June 30, 2022, in the ordinary course of business, we had total estimated purchase commitments from vendors of approximately \$704 million. In addition, as of June 30, 2022, we had obligations under our operating leases of approximately \$171 million, \$34 million of which will be paid in the fiscal year 2023.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

MARKET RISKS

The Company is exposed to market risks arising from adverse changes in foreign currency exchange rates and interest rates. In the normal course of business, the Company uses a variety of techniques and derivative financial instruments as part of its overall risk management strategy, which is primarily focused on its exposure in relation to the Malaysian Ringgit, Chinese Renminbi, Swiss Franc and Japanese Yen. No significant changes have occurred in the techniques and instruments used.

Interest Rate Risk

As of June 30, 2022, the Company's total borrowings include variable rate borrowings, which exposes the Company to changes in interest rates. In November 2019, the Company entered into an interest rate swap contract to limit the exposure of its variable interest rate debt by effectively converting a portion of interest payments to fixed interest rate debt. If the Company had not effectively hedged its variable rate debt, a change in the interest rate of 100 basis points on these variable rate borrowings would have resulted in additional interest expense of \$19 million for the year ended June 30, 2022.

On February 23, 2022, the Company entered into an interest rate cap (the "Cap"), with an effective date of July 1, 2023. As the Cap is not effective until July 2023, there is no impact on variable rate borrowings from the Cap for the year ended June 30, 2022.

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Management's Responsibility for Preparation of the Financial Statements

Management is responsible for the preparation of the Consolidated Financial Statements included in this Annual Report on Form 10-K. The consolidated financial statements were prepared in accordance with the accounting principles generally accepted in the United States of America and include amounts that are based on the best estimates and judgments of management. The other financial information contained in this Annual Report on Form 10-K is consistent with the Consolidated Financial Statements.

Management's Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting. The Company's internal control system is designed to provide reasonable assurance concerning the reliability of the financial data used in the preparation of the Company's Consolidated Financial Statements, as well as reasonable assurance with respect to safeguarding the Company's assets from unauthorized use or disposition.

All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement presentation and other results of such systems.

Management conducted an evaluation of the effectiveness of the Company's internal control over financial reporting as of June 30, 2022. In making this evaluation, management used the criteria set forth by the *Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control - Integrated Framework (2013)*. Management's evaluation included reviewing the documentation of its controls, evaluating the design effectiveness of controls and testing their operating effectiveness. Based on the evaluation, management concluded that as of June 30, 2022, the Company's internal controls over financial reporting were effective.

Ernst & Young LLP, an independent registered public accounting firm, has issued its report on the effectiveness of our internal control over financial reporting as of June 30, 2022. Its report is included herein.

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of II-VI Incorporated

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of II-VI Incorporated and Subsidiaries (the Company) as of June 30, 2022 and 2021, the related consolidated statements of earnings (loss), comprehensive income (loss), shareholders' equity and mezzanine equity and cash flows for each of the three years in the period ended June 30, 2022, and the related notes and the financial statement schedule listed in the Index at Item 15(a)(2) (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at June 30, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended June 30, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of June 30, 2022, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated August 29, 2022 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Accounting for commercial agreement

Description of the Matter As described in Note 12 to the consolidated financial statements, the Company entered into a commercial agreement and received advance payments to fund the purchase of plant and equipment for the production of certain engineered materials products within the Compound Semiconductors segment. The Company determined that it has a substantive right to substitute alternative assets throughout the period of use, and therefore a lease does not exist within the commercial agreement.

Auditing the Company's accounting for the commercial agreement was complex due to the judgment required to determine whether the contract is a lease or contains a lease, which included an evaluation of whether the contractual rights and obligations in the commercial agreement provide the Company with the ability to substitute alternative assets throughout the period of use and whether the right of substitution is substantive.

How We Addressed the Matter in Our Audit We obtained an understanding, evaluated the design and tested the operating effectiveness of controls relating to management's accounting for the commercial agreement. For example, we tested controls related to management's review of the relevant rights and obligations in the contract and related assessment as to whether the contract is a lease or contains a lease.

To test the Company's accounting for the commercial agreement, our audit procedures included, among others, evaluating the reasonableness of the Company's interpretation of the rights and obligations in the contract by reading the commercial agreement, performing inquiries of and obtaining written representations from management.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2008.

Pittsburgh, Pennsylvania
August 29, 2022

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of II-VI Incorporated

Opinion on Internal Control over Financial Reporting

We have audited II-VI Incorporated and Subsidiaries' internal control over financial reporting as of June 30, 2022, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, II-VI Incorporated and Subsidiaries (the Company) maintained, in all material respects, effective internal control over financial reporting as of June 30, 2022, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of June 30, 2022 and 2021, the related consolidated statements of earnings (loss), comprehensive income (loss), shareholders' equity and mezzanine equity and cash flows for each of the three years in the period ended June 30, 2022, and the related notes and the financial statement schedule listed in the Index at Item 15(a)(2) and our report dated August 29, 2022 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Pittsburgh, Pennsylvania

August 29, 2022

II-VI Incorporated and Subsidiaries
Consolidated Balance Sheets
(\$000)

June 30,	2022	2021
Assets		
Current Assets		
Cash, cash equivalents, and restricted cash	\$ 2,582,371	\$ 1,591,892
Accounts receivable - less allowance for doubtful accounts of \$4,206 at June 30, 2022 and \$924 at June 30, 2021	700,331	658,962
Inventories	902,559	695,828
Prepaid and refundable income taxes	19,585	13,095
Prepaid and other current assets	100,346	67,617
Total Current Assets	4,305,192	3,027,394
Property, plant & equipment, net	1,363,195	1,242,906
Goodwill	1,285,759	1,296,727
Other intangible assets, net	635,404	718,460
Deferred income taxes	31,714	33,498
Other assets	223,582	193,665
Total Assets	\$ 7,844,846	\$ 6,512,650
Liabilities, Mezzanine Equity and Shareholders' Equity		
Current Liabilities		
Current portion of long-term debt	\$ 403,212	\$ 62,050
Accounts payable	434,917	294,486
Accrued compensation and benefits	172,109	181,491
Operating lease current liabilities	27,574	25,358
Accrued income taxes payable	29,317	20,295
Other accrued liabilities	199,830	145,909
Total Current Liabilities	1,266,959	729,589
Long-term debt	1,897,214	1,313,091
Deferred income taxes	77,259	73,962
Operating lease liabilities	110,214	125,541
Other liabilities	109,922	138,119
Total Liabilities	3,461,568	2,380,302
Mezzanine Equity		
Series B redeemable convertible preferred stock, no par value, 5% cumulative; issued - 75,000 shares at June 30, 2022 and June 30, 2021, redemption value - \$798,181 and 759,583 as of June 30, 2022 and June 30, 2021, respectively	766,803	726,178
Shareholders' Equity		
Series A preferred stock, no par value, 6% cumulative; issued - 2,300,000 shares at June 30, 2022 and June 30, 2021	445,319	445,319
Common stock, no par value; authorized - 300,000,000 shares; issued - 120,923,171 shares at June 30, 2022; issued - 119,126,585 shares at June 30, 2021	2,064,552	2,028,273
Accumulated other comprehensive income (loss)	(2,167)	14,267
Retained earnings	1,348,125	1,136,777
	3,855,829	3,624,636
Treasury stock, at cost - 13,972,758 shares at June 30, 2022 and 13,640,555 shares at June 30, 2021	(239,354)	(218,466)
Total Shareholders' Equity	3,616,475	3,406,170
Total Liabilities, Mezzanine Equity and Shareholders' Equity	\$ 7,844,846	\$ 6,512,650

See Notes to Consolidated Financial Statements.

II-VI Incorporated and Subsidiaries
Consolidated Statements of Earnings (Loss)

Year Ended June 30,

	2022	2021	2020
<i>(\$000, except per share data)</i>			
Revenues	\$ 3,316,616	\$ 3,105,891	\$ 2,380,071
Costs, Expenses and Other Expense (Income)			
Cost of goods sold	2,051,120	1,928,432	1,588,890
Internal research and development	377,106	330,105	339,073
Selling, general and administrative	474,096	445,235	412,629
Interest expense	121,254	59,899	89,409
Other expense (income), net	11,233	(10,370)	13,998
Total Costs, Expenses and Other Expense (Income)	3,034,809	2,753,301	2,443,999
Earnings (Loss) Before Income Taxes	281,807	352,590	(63,928)
Income Tax Expense	47,048	55,038	3,101
Net Earnings (Loss)	\$ 234,759	\$ 297,552	\$ (67,029)
Less: Dividends on Preferred Stock	\$ 68,225	\$ 37,231	\$ —
Net Earnings (Loss) available to the Common Shareholder	\$ 166,534	\$ 260,321	\$ (67,029)
Basic Earnings (Loss) Per Share	\$ 1.57	\$ 2.50	\$ (0.79)
Diluted Earnings (Loss) Per Share	\$ 1.45	\$ 2.37	\$ (0.79)

See Notes to Consolidated Financial Statements.

II-VI Incorporated and Subsidiaries
Consolidated Statements of Comprehensive Income (Loss)

Year Ended June 30,	2022	2021	2020
<i>(\$000)</i>			
Net earnings (loss)	\$ 234,759	\$ 297,552	\$ (67,029)
Other comprehensive income (loss):			
Foreign currency translation adjustments	(89,967)	86,991	(15,969)
Change in fair value of interest rate swap, net of taxes of \$ 11,901, \$3,372, and \$0 for the years ended June 30, 2022, 2021, and 2020, respectively	43,508	12,312	(44,085)
Change in fair value of interest rate cap, net of taxes of \$ 3,818 for the year ended June 30, 2022	14,306	—	—
Pension adjustment, net of taxes of \$ 3,856, \$576 and (\$851) for the years ended June 30, 2022, 2021, and 2020, respectively	15,719	2,347	(3,108)
Other comprehensive income (loss)	(16,434)	101,650	(63,162)
Comprehensive income (loss)	<u>\$ 218,325</u>	<u>\$ 399,202</u>	<u>\$ (130,191)</u>

See Notes to Consolidated Financial Statements.

II-VI Incorporated and Subsidiaries
Consolidated Statements of Shareholders' Equity and Mezzanine Equity

	Common Stock		Preferred Stock		Accumulated Other Comprehensive	Retained	Treasury Stock			Mezzanine Equity	
	Shares	Amount	Shares	Amount	Income (Loss)	Earnings	Shares	Amount	Total	Preferred Shares	Amount
<i>(000, including share amounts)</i>											
Balance - June 30, 2019	76,315	\$ 382,423	—	\$ —	\$ (24,221)	\$ 943,581	(12,604)	\$ (168,574)	\$1,133,209	—	\$ —
Share-based and deferred compensation activities	2,888	116,817	—	—	—	—	(702)	(29,114)	87,703	—	—
Net loss	—	—	—	—	—	(67,029)	—	—	(67,029)	—	—
Purchases of treasury stock	—	—	—	—	—	—	(50)	(1,625)	(1,625)	—	—
Shares issued related to Finisar Acquisition	26,713	987,707	—	—	—	—	—	—	987,707	—	—
Foreign currency translation adjustments	—	—	—	—	(15,969)	—	—	—	(15,969)	—	—
Change in fair value of interest rate swap	—	—	—	—	(44,085)	—	—	—	(44,085)	—	—
Pension adjustment, net of taxes of (\$851)	—	—	—	—	(3,108)	—	—	—	(3,108)	—	—
Balance - June 30, 2020	105,916	\$1,486,947	—	\$ —	\$ (87,383)	\$ 876,552	(13,356)	\$ (199,313)	\$2,076,803	—	\$ —
Share-based and deferred compensation activities	2,512	102,737	—	—	—	—	(284)	(19,153)	83,584	—	—
Shares issued in underwritten public offering	10,698	438,589	2,300	445,319	—	—	—	—	883,908	—	—
Series B shares issued in March 2021	—	—	—	—	—	—	—	—	—	75	716,087
Net earnings	—	—	—	—	—	297,552	—	—	297,552	—	—
Accretion to redemption value of Series B share issued in March 2021	—	—	—	—	—	(508)	—	—	(508)	—	508
Foreign currency translation adjustments	—	—	—	—	86,991	—	—	—	86,991	—	—
Change in fair value of interest rate swap, net of taxes of \$3,372	—	—	—	—	12,312	—	—	—	12,312	—	—
Pension adjustment, net of taxes of (\$576)	—	—	—	—	2,347	—	—	—	2,347	—	—
Dividends	—	—	—	—	—	(36,819)	—	—	(36,819)	—	9,583
Balance - June 30, 2021	119,127	\$2,028,273	2,300	\$ 445,319	\$ 14,267	\$1,136,777	(13,640)	\$ (218,466)	\$3,406,170	75	\$ 726,178
Share-based and deferred compensation activities	1,796	92,667	—	—	—	—	(333)	(20,888)	71,779	—	—
Net earnings	—	—	—	—	—	234,759	—	—	234,759	—	—
Foreign currency translation adjustments	—	—	—	—	(89,967)	—	—	—	(89,967)	—	—
Change in fair value of interest rate swap, net of taxes of \$11,901	—	—	—	—	43,508	—	—	—	43,508	—	—
Change in fair value of interest rate cap, net of taxes of \$3,818	—	—	—	—	14,306	—	—	—	14,306	—	—
Pension adjustment, net of taxes of \$3,856	—	—	—	—	15,719	—	—	—	15,719	—	—
Dividends and deemed dividends	—	—	—	—	—	(68,327)	—	—	(68,327)	—	40,625
Adjustments for ASU 2020-06	—	(56,388)	—	—	—	44,916	—	—	(11,472)	—	—
Balance - June 30, 2022	120,923	\$2,064,552	2,300	\$ 445,319	\$ (2,167)	\$1,348,125	(13,973)	\$ (239,354)	\$3,616,475	75	\$ 766,803

See Notes to Consolidated Financial Statements.

II-VI Incorporated and Subsidiaries
Consolidated Statements of Cash Flows
Year Ended June 30,

	2022	2021	2020
(\$000)			
Cash Flows from Operating Activities			
Net earnings (loss)	\$ 234,759	\$ 297,552	\$ (67,029)
Adjustments to reconcile net earnings (loss) to net cash provided by operating activities:			
Depreciation	207,132	187,803	156,690
Amortization	79,647	82,266	64,192
Share-based compensation expense	73,214	70,953	68,480
Amortization of discount on convertible debt and debt issuance costs	18,807	20,732	22,150
Debt extinguishment expense	—	24,747	3,960
Losses (gains) on disposals of property, plant and equipment	617	2,537	(1,461)
Unrealized losses on foreign currency remeasurements and transactions	1,167	5,545	14,442
Earnings from equity investments	(2,190)	(14,246)	(2,775)
Deferred income taxes	(8,154)	(371)	(42,454)
Impairment of investment	—	—	4,980
Increase (decrease) in cash from changes in (net of effects of acquisitions):			
Accounts receivable	(55,193)	(51,697)	(91,981)
Inventories	(230,882)	(44,645)	112,572
Accounts payable	97,053	2,266	45,026
Income taxes	17,961	(18,086)	40,061
Accrued compensation and benefits	(9,382)	23,934	—
Other operating net assets (liabilities)	(11,224)	(14,937)	(29,561)
Net cash provided by operating activities	413,332	574,353	297,292
Cash Flows from Investing Activities			
Additions to property, plant & equipment	(314,332)	(146,337)	(136,877)
Purchases of businesses, net of cash acquired	—	(34,394)	(1,036,609)
Other investing activities	(5,750)	7,774	(5,804)
Net cash used in investing activities	(320,082)	(172,957)	(1,179,290)
Cash Flows from Financing Activities			
Proceeds from issuance of Senior Notes	990,000	—	—
Proceeds from issuance of common shares	—	460,000	—
Proceeds from issuance of Series A preferred shares	—	460,000	—
Proceeds from issuance of Series B preferred shares	—	750,000	—
Proceeds from borrowings of Term A Facility	—	—	1,241,000
Proceeds from borrowings of Term B Facility	—	—	720,000
Proceeds from borrowings of Revolving Credit Facility	—	—	160,000
Proceeds from borrowings under prior Credit Facility	—	—	10,000
Payment of Finisar Notes	(14,888)	—	(560,112)
Payments on borrowings under prior Term Loan, Credit Facility, and other loans	—	—	(176,618)
Payments on borrowings under Term A Facility	(62,050)	(137,050)	(46,538)
Payments on borrowings under Term B Facility	—	(714,600)	(5,400)
Payments on borrowings under Revolving Credit Facility	—	(74,000)	(86,000)
Debt issuance costs	(10,197)	—	(63,510)
Equity issuance costs	—	(58,596)	—
Proceeds from exercises of stock options and purchases of stock under employee stock purchase plan	17,858	32,360	13,467
Common stock repurchases	—	—	(1,625)
Payments in satisfaction of employees' minimum tax obligations	(21,249)	(19,701)	(28,700)
Payment of dividends	(34,508)	(20,319)	—
Other financing activities	(2,013)	(2,367)	(2,339)
Net cash provided by financing activities	862,953	675,727	1,173,625
Effect of exchange rate changes on cash, cash equivalents, and restricted cash	34,276	21,723	(3,453)
Net increase in cash and cash equivalents, and restricted cash	990,479	1,098,846	288,174
Cash, Cash Equivalents, and Restricted Cash at Beginning of Period	1,591,892	493,046	204,872
Cash, Cash Equivalents, and Restricted Cash at End of Period	\$ 2,582,371	\$ 1,591,892	\$ 493,046
Non cash transactions:			
Additions to property, plant & equipment included in accounts payable	\$ 84,890	\$ 32,028	\$ 21,801

See Notes to Consolidated Financial Statements.

II-VI Incorporated and Subsidiaries

Notes to Consolidated Financial Statements

Note 1. Nature of Business and Summary of Significant Accounting Policies

Nature of Business. II-VI Incorporated ("II-VI," the "Company," "we," "us" or "our"), a global leader in engineered materials and optoelectronic components and devices, is a vertically-integrated manufacturing company that develops, manufactures and markets engineered materials and optoelectronic components and devices for precision use in industrial materials processing, optical communications, aerospace and defense, consumer electronics, semiconductor capital equipment, life sciences and automotive applications. The Company markets its products through its direct sales force and through distributors and agents.

The Company uses certain uncommon materials and compounds to manufacture its products. Some of these materials are available from only one proven outside source. The continued high quality of these materials is critical to the stability of the Company's manufacturing yields. The Company has not experienced material production delays due to a shortage of materials. However, the Company does occasionally experience problems associated with vendor-supplied materials not meeting specifications for quality or purity. A significant failure of the Company's suppliers to deliver sufficient quantities of necessary high-quality materials on a timely basis could have a material adverse effect on the Company's results of operations.

The Company is closely monitoring the ongoing impact of the COVID-19 pandemic and related factors on all aspects of our business, including the impact to our employees, suppliers and customers, as well as the impact to the countries and markets in which II-VI operates. In particular, the Company is continuing to focus intensely on mitigating any resulting adverse impacts on our foreign and domestic operations, starting by prioritizing the safety of our employees, suppliers and customers.

Principles of Consolidation. The Consolidated Financial Statements include the accounts of the Company. All intercompany transactions and balances have been eliminated.

Estimates. The preparation of financial statements in conformity with accounting principles generally accepted in the United States ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Foreign Currency Translation. For all foreign subsidiaries whose functional currency is not the U.S. dollar, the functional currency is the local currency. Assets and liabilities of those operations are translated into U.S. dollars using period-end exchange rates while income and expenses are translated using the average exchange rates for the reporting period. Translation adjustments are recorded as accumulated other comprehensive income (loss) within shareholders' equity in the accompanying Consolidated Balance Sheets.

Cash, Cash Equivalents and Restricted Cash. The Company considers highly liquid investment instruments with an original maturity of three months or less to be cash equivalents.

Accounts Receivable. The Company makes estimates evaluating its allowance for doubtful accounts. The Company continuously monitors collections and payments from its customers and maintains a provision for estimated credit losses based upon its historical experience, current market conditions and any specific customer collection issues that it has identified.

Inventories. Inventories are valued at the lower of cost or net realizable value, with cost determined on the first-in, first-out basis. Inventory costs include material, labor and manufacturing overhead. In evaluating the net realizable value of inventory, management also considers, if applicable, other factors, including known trends, market conditions, currency exchange rates and other such issues. The Company generally records a reduction to the carrying value of inventory as a charge against earnings for all products on hand more than 12 to 24 months, depending on the nature of the products that have not been sold to customers or cannot be further manufactured for sale to alternative customers. An additional charge may be recorded for product on hand that is in excess of product sold to customers over the same periods noted above.

Property, Plant and Equipment. Property, plant and equipment are carried at cost or fair value upon acquisition. Major improvements are capitalized, while maintenance and repairs are generally expensed as incurred. The Company reviews its property, plant and equipment and other long-lived assets for impairment whenever events or circumstances indicate that the carrying amounts may not be recoverable. Depreciation on property, plant and equipment and amortization on finance lease right-of-use assets for financial reporting purposes is computed primarily by the straight-line method over the estimated useful lives for building, building improvements and land improvements of 10 to 20 years and 3 to 20 years for machinery and equipment.

Leases. Leases are recognized under Accounting Standards Codification 842, Leases. The Company determines whether a contract contains a lease at contract inception. A contract contains a lease if there is an identified asset and the Company has the right to control the asset. Operating lease right-of-use ("ROU") assets represent the Company's right to use an underlying asset for the lease term, and lease liabilities represent the Company's obligation to make lease payments arising from the lease. Operating lease ROU assets and lease liabilities are recognized at commencement date based on the present value of lease payments over the lease term. The Company uses the incremental borrowing rate in determining the present value of lease payments, unless the implicit rate is readily determinable. If lease terms include options to extend or terminate the lease, the ROU asset and lease liability are measured based on the reasonably certain decision. The Company has lease agreements with lease and non-lease components, which are accounted for as a single lease component for all classes of leased assets for which the Company is the lessee. Additionally, for certain equipment leases, the portfolio approach is applied to account for the operating lease ROU assets and lease liabilities. In the Consolidated Statements of Earnings (Loss), lease expense for operating lease payments is recognized on a straight-line basis over the lease term. For finance leases, interest expense is recognized on the lease liability and the ROU asset is amortized over the lease term. Some leasing arrangements require variable payments that are dependent upon usage or output, or may vary for other reasons, such as insurance or tax payments. Variable lease payments are recognized as incurred and are not presented as part of the ROU asset or lease liability. See Note 12. Leases for additional information.

Business Combinations. The Company accounts for business combinations by establishing the acquisition-date fair value as the measurement for all assets acquired and liabilities assumed. Certain provisions of U.S. GAAP prescribe, among other things, the determination of acquisition-date fair value of consideration paid in a business combination (including contingent consideration) and the exclusion of transaction and acquisition-related restructuring costs from acquisition accounting.

Goodwill. The excess purchase price over the fair value allocated to identifiable tangible and intangible net assets of businesses acquired is reported as goodwill in the accompanying Consolidated Balance Sheets. The Company tests goodwill for impairment at least annually as of April 1, or when events or changes in circumstances indicate that goodwill might be impaired. The evaluation of impairment involves comparing the current fair value of the Company's reporting units to the recorded value (including goodwill). The Company uses a discounted cash flow ("DCF") model and/or a market analysis to determine the fair value of its reporting units. A number of assumptions and estimates are involved in estimating the forecasted cash flows used in the DCF model, including markets and market shares, sales volume and pricing, costs to produce, working capital changes and income tax rates. Management considers historical experience and all available information at the time the fair values of the reporting units are estimated. Goodwill impairment is measured as the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill.

The Company has the option to perform a qualitative assessment of goodwill prior to completing the quantitative assessment described above to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount, including goodwill and other intangible assets. If the Company concludes that this is the case, it must perform the quantitative assessment. Otherwise, the Company will forego the quantitative assessment and does not need to perform any further testing. As of April 1 of fiscal years 2022 and 2021, the Company completed its annual impairment tests of its reporting units using the quantitative assessment. Based on the results of these analyses the Company's goodwill was not impaired; the fair value is well in excess of the carrying value for each reporting unit.

Intangibles. Intangible assets are initially recorded at their cost or fair value upon acquisition. Finite-lived intangible assets are amortized for financial reporting purposes using the straight-line method over the estimated useful lives of the assets ranging from 3 to 20 years. Indefinite-lived intangible assets are not amortized but tested annually for impairment at April 1, or when events or changes in circumstances indicate that indefinite-lived intangible assets might be impaired.

We previously classified intangible asset amortization expense within SG&A expenses in our Consolidated Statements of Earnings (Loss). Amortization expense on the developed technology intangible assets is now classified within Cost of goods sold, with amortization expense on customer lists and trade names remaining within SG&A expenses in our Consolidated Statements of Earnings (Loss). Prior period amounts have been conformed to the current period presentation, which resulted in an increase to Cost of goods sold and a decrease to SG&A expenses of \$39 million and \$28 million for the years ended June 30, 2021 and June 30, 2020, respectively.

Investments in Other Entities. In the normal course of business, the Company enters into various types of investment arrangements, each having unique terms and conditions. These investments may include equity interests held by the Company in business entities, including general or limited partnerships, contractual ventures, or other forms of equity participation. The Company determines whether such investments involve a variable interest entity ("VIE") based on the characteristics of the subject entity. If the entity is determined to be a VIE, then management determines if the Company is the primary beneficiary of the entity and whether or not consolidation of the VIE is required. The primary beneficiary consolidating the VIE must normally have both (i) the power to direct the activities of a VIE that most significantly affect the VIE's economic performance and (ii) the obligation to absorb losses of the VIE or the right to receive benefits from the VIE, in either case that could potentially be significant to the VIE. When the Company is deemed to be the primary beneficiary, the VIE is consolidated and the other party's equity interest in the VIE is accounted for as a noncontrolling interest.

The Company generally accounts for investments it makes in VIEs in which it has determined that it does not have a controlling financial interest but has significant influence over or holds at least a 20% ownership interest using the equity method. Any such investment not meeting the parameters to be accounted under the equity method would be accounted for under ASC 321, Investments - Equity Securities. If an entity fails to meet the characteristics of a VIE, management then evaluates such entity under the voting model. Under the voting model, management consolidates the entity if they determine that the Company, directly or indirectly, has greater than 50% of the voting shares and determines that other equity holders do not have substantive participating rights.

Series A Mandatory Convertible Preferred Stock. The II-VI Series A Mandatory Convertible Preferred Stock is initially measured at fair value, less underwriting discounts and commissions and offering expenses paid by the Company. The Preferred Stock's dividends are cumulative, at 6% per annum.

Series B Convertible Preferred Stock. The II-VI Series B-1 Convertible Preferred Stock is initially measured at fair value less issuance costs, accreted to its redemption value over a ten-year period (using the effective interest method) with such accretion accounted for as deemed dividends and reductions to Net Earnings (Loss) Available to the Common Shareholder.

Commitments and Contingencies. Liabilities for loss contingencies arising from claims, assessments, litigation, fines, and penalties and other sources are recorded when it is probable that a liability has been incurred and the amount of the assessment and/or remediation can be reasonably estimated. Legal costs incurred in connection with loss contingencies are expensed as incurred. Such accruals are adjusted as further information develops or circumstances change. Our customers may discover defects in our products after the products have been fully deployed and operated under peak stress conditions. If we are unable to correct defects or other problems, we could experience, among other things, loss of customers, increased costs of product returns and warranty expenses, damage to our brand reputation, failure to attract new customers or achieve market acceptance, diversion of development and engineering resources, or legal action by our customers. The Company had no material loss contingency liabilities at June 30, 2022 related to commitments and contingencies.

Income Taxes. Deferred income tax assets and liabilities are determined based on the differences between the Consolidated Financial Statements and tax basis of assets and liabilities using enacted tax rates in effect in the years in which the differences are expected to reverse. Valuation allowances are established when necessary to reduce deferred income tax assets to the amount more likely than not to be realized. The Company's accounting policy is to apply acquired deferred tax liabilities to pre-existing deferred tax assets before evaluating the need for a valuation allowance for acquired deferred tax assets.

The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such a position are measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate resolution. The amount of unrecognized tax benefits is adjusted for changes in facts and circumstances. For example, adjustments could result from significant amendments to existing tax law and the issuance of regulations or interpretations by the taxing authorities, new information obtained during a tax examination, or resolution of an examination. The Company believes that its estimates for uncertain tax positions are appropriate and sufficient to pay assessments that may result from examinations of its tax returns. The Company recognizes both accrued interest and penalties related to unrecognized tax benefits in income tax expense.

Revenue Recognition. Revenue is recognized under Accounting Standards Codification 606, Revenue from Contracts with Customers (ASC 606), when or as obligations under the terms of a contract with the Company's customer have been satisfied and control has transferred to the customer. The Company has elected the practical expedient to exclude all taxes from the measurement of the transaction price.

For contracts with commercial customers, which comprise the majority of the Company's performance obligations, ownership of the goods and associated revenue are transferred to customers at a point in time, generally upon shipment of a product to the customer or receipt of the product by the customer and without significant judgments. The majority of contracts typically require payment within 30 to 90 days after transfer of ownership to the customer.

Contracts with the U.S. government through its prime contractors are typically for products or services with no alternative future use to the Company with an enforceable right to payment for performance completed to date, whereas commercial contracts typically have alternative use. Customized products with no alternative future use to the Company with an enforceable right to payment for performance completed to date are recorded over time utilizing the output method of units delivered. The Company considers this to be a faithful depiction of the transfer to the customer of revenue over time due to short cycle time and immaterial work-in-process balances. The majority of contracts typically require payment within 30 to 90 days after transfer of ownership to the customer.

Service revenue includes repairs, non-recurring engineering, tolling arrangements and installation. Repairs, tolling and installation activities are usually completed in a short period of time (normally less than one month) and therefore recorded at a point in time when the services are completed. Non-recurring engineering arrangements are typically recognized over time under the time and material practical expedient, as the entity has a right to consideration from a customer, in an amount that corresponds directly with the value to the customer of the entity's performance completed to date. The majority of contracts typically require payment within 90 days.

The Company's revenue recognition policy is consistently applied across the Company's segments, product lines, services, and geographical locations. For the periods covered herein, the Company measures revenue based on the amount of consideration it expects to be entitled to in exchange for products or services, reduced by the amount of variable consideration related to products expected to be returned. The Company determines variable consideration, which primarily consists of product returns and distributor sales price reductions resulting from price protection agreements, by estimating the impact of such reductions based on historical analysis of such activity.

Under ASC 606, the Company expenses sales commissions when incurred because the amortization period would have been one year or less. These costs are recorded within selling, general and administrative expenses. The Company has elected to recognize the costs for freight and shipping when control over products has transferred to the customer as an expense in cost of goods sold.

The Company monitors and tracks the amount of product returns and reduces revenue at the time of shipment for the estimated amount of future returns, based on historical experience.

The Company offers an assurance-type limited warranty that products will be free from defects in materials and workmanship. The Company establishes an accrual for estimated warranty expenses at the time revenue is recognized. The warranty is typically one year, although can be longer periods for certain products, and is limited to either (1) the replacement or repair of the product or (2) a credit against future purchases.

The Company believes that disaggregating revenue by end market provides the most relevant information regarding the nature, amount, timing, and uncertainty of revenues and cash flows. See Note 4. Revenue from Contracts with Customers.

Research and Development. Research and development expenses include salaries, contractor and consultant fees, supplies and materials, as well as costs related to other overhead such as depreciation, facilities, utilities and other departmental expenses. The costs we incur with respect to internally developed technology, including allocations of our wafer fabrication and other manufacturing facilities and resources utilized to support R&D programs, are included in research and development expenses as incurred.

Share-Based Compensation. Share-based compensation arrangements require the recognition in net earnings (loss) of the grant date fair value of stock compensation (for equity-classified awards). The Company recognizes the share-based compensation expense over the requisite service period of the individual grantees, which generally equals the vesting period, net of forfeitures. The estimated annualized forfeitures are based on the Company's historical experience of pre-vesting cancellations. The Company will record additional expense in future periods if the actual forfeiture rate is lower than estimated, and will adjust expense in future periods if the actual forfeitures are higher than estimated.

Accumulated Other Comprehensive Income (Loss). Accumulated other comprehensive income (loss) is a measure of all changes in shareholders' equity that result from transactions and other economic events in the period other than transactions with owners. Accumulated other comprehensive income (loss) is a component of shareholders' equity and consists of accumulated foreign currency translation adjustments, changes in the fair value of interest rate swap derivative instruments, and pension adjustments.

Fair Value Measurements. The Company applies fair value accounting for all financial assets and liabilities that are required to be recognized or disclosed at fair value in the Consolidated Financial Statements. Fair value is defined as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities, the Company considers the principal or most advantageous market in which the Company would transact, and the market-based risk measurements or assumptions that market participants would use in pricing the asset or liability, such as inherent risk, transfer restrictions and credit risk.

Note 2. Recently Issued Financial Accounting Standards

Debt - Debt with Conversion and Other Options and Derivatives and Hedging - Contracts in Entity's Own Equity

In August 2020, the FASB issued ASC Update No. 2020-06, Debt - Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging - Contracts in Entity's Own Equity (Subtopic 815-40) ("ASU 2020-06"). The update simplifies the accounting for convertible instruments by eliminating two accounting models (i.e., the cash conversion model and beneficial conversion feature model) and reducing the number of embedded conversion features that could be recognized separately from the host contract. ASU 2020-06 also enhances transparency and improves disclosures for convertible instruments and earnings per share guidance. The Company adopted this standard as of July 1, 2021. The Company elected to use the modified retrospective method to report the effect of the changes. Adoption of the standard affected the Company's currently outstanding 0.25% Convertible Senior Notes due 2022 (the "II-VI Convertible Notes"). Refer to Note 8. Debt for the impact of the adoption on the II-VI Convertible Notes.

Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes

In December 2019, the FASB issued ASU No. 2019-12, Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes. The guidance simplifies the accounting for income taxes by removing certain exceptions and adding guidance to improve consistency for other areas of Topic 740. The Company adopted this standard effective July 1, 2021. The adoption did not have a material impact on the Company's consolidated financial statements.

Pronouncements Currently Under Evaluation

Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting

In March 2020, the FASB issued ASU 2020-04, Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting, which provides optional expedients to ease the potential burden of accounting for the effects of reference rate reform as it pertains to contract modifications of debt and lease contracts and derivative contracts identified in a hedging relationship. These amendments are effective immediately and may be applied prospectively to contract modifications made and hedging relationships entered into or evaluated on or before December 31, 2022. The Company is in the process of evaluating the impact of the pronouncement.

Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers

In October 2021, the Financial Accounting Standards Board (the "FASB") issued ASU No. 2021-08, Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers ("ASU 2021-08"), which requires an acquirer to recognize and measure contract assets and liabilities acquired in a business combination in accordance with ASC 606 rather than adjust them to fair value at the acquisition date. We will adopt this accounting standard in the first quarter of fiscal 2023. Results of operations for quarterly periods prior to adoption remain unchanged as a result of the adoption of ASU No. 2021-08. The acquisition of Coherent, and all future acquisitions, will be accounted for in accordance with ASU 2021-08. Refer to Note 3. Coherent Acquisition for further information. The adoption of this standard did not have an impact on our Consolidated Financial Statements.

Note 3. Coherent Acquisition

On July 1, 2022, the Company completed its acquisition of all of the outstanding equity interests in Coherent, Inc. (the "Merger"), a global provider of lasers and laser-based technology for scientific, commercial, and industrial customers, in a combined cash and stock transaction in accordance with the Agreement and Plan of Merger dated March 25, 2021 (the "Merger Agreement"). The Merger was consummated with the goal of creating a uniquely strategic global leader capable of delivering to our customers the most attractive combination of photonic solutions, compound semiconductors, as well as laser technology and systems. The results of the Merger will be included in the Company's consolidated operating results beginning on July 1, 2022.

Pursuant to the terms of the Merger Agreement, and subject to the conditions set forth therein, each share of common stock of Coherent, par value \$0.01 per share (the "Coherent Common Stock"), issued and outstanding immediately prior to July 1, 2022, was canceled and extinguished and automatically converted into the right to receive \$220.00 in cash and 0.91 of a share of II-VI Common Stock. In order to complete the funding of the Merger, the Company had a net cash outflow of \$2.1 billion on July 1, 2022. Estimated expenses, comprised of success-based transaction costs and estimated severance costs relating to the consummation of the Merger are approximately \$87 million and will be recognized as expense in the Condensed Consolidated Statement of Earnings for the first quarter of fiscal year 2023. A total of 23 million shares were issued in conjunction with the closing of the Merger. Estimated Merger consideration is approximately \$7.1 billion, including replacement equity awards attributable to pre-combination service for certain Coherent restricted stock units.

The Company will account for the acquisition as a business combination and will recognize the assets acquired and liabilities assumed at their fair values as of July 1, 2022. A significant portion of the purchase price is expected to be allocated to intangible assets and goodwill. Due to the timing of the Merger being after our fiscal year-end, and the amount of assets acquired and liabilities assumed, our initial accounting is incomplete and therefore we have not provided the other disclosures set forth in ASC 805, Business Combinations. Such information will be disclosed in our condensed consolidated financial statements for the fiscal quarter ending September 30, 2022. The calculation of estimated expenses and estimated Merger consideration set forth herein is preliminary and will be revised as additional information becomes available during the measurement period, which could be up to 12 months from the acquisition date. Any such revisions or changes may be material.

The expenses associated with the Merger for the year ended June 30, 2022, have not been allocated to an operating segment, and are presented in the Unallocated and Other in Note 14. Segment and Geographic Reporting. The total expense for the years ended June 30, 2022 and 2021 was \$36 million and \$27 million, respectively and is recorded in SG&A in our Consolidated Statement of Earnings (Loss).

Note 4. Revenue from Contracts with Customers

The following table summarizes disaggregated revenue by market for the years ended June 30, 2022, 2021 and 2020 (\$000):

	Year Ended June 30, 2022		
	Photonic Solutions	Compound Semiconductors	Total
Industrial	\$ 71,027	\$ 340,079	\$ 411,106
Communications	2,078,288	124,843	2,203,131
Aerospace & Defense	—	184,635	184,635
Consumer	9,255	221,002	230,257
Semiconductor	13,841	137,182	151,023
Other	53,785	82,679	136,464
Total Revenues	<u>\$ 2,226,196</u>	<u>\$ 1,090,420</u>	<u>\$ 3,316,616</u>

Year Ended June 30, 2021			
	Photonic Solutions	Compound Semiconductors	Total
Industrial	\$ 50,181	\$ 275,698	\$ 325,879
Communications	1,917,697	134,969	2,052,666
Aerospace & Defense	—	201,845	201,845
Consumer	9,138	277,319	286,457
Semiconductor	9,778	107,374	117,152
Other	51,490	70,402	121,892
Total Revenues	<u>\$ 2,038,284</u>	<u>\$ 1,067,607</u>	<u>\$ 3,105,891</u>

Year Ended June 30, 2020				
	Photonic Solutions	Compound Semiconductors	Unallocated & Other	Total
Industrial	\$ 52,806	\$ 240,475	\$ —	\$ 293,281
Communications	1,437,377	125,527	21,557	1,584,461
Aerospace & Defense	—	175,097	—	175,097
Consumer	4,620	126,227	494	131,341
Semiconductor	7,971	102,203	—	110,174
Other	34,016	51,701	—	85,717
Total Revenues	<u>\$ 1,536,790</u>	<u>\$ 821,230</u>	<u>\$ 22,051</u>	<u>\$ 2,380,071</u>

"Other" revenue included in the tables above include revenue from the life science/medical and automotive end markets.

Contract Liabilities

Payments received from customers are based on invoices or billing schedules as established in contracts with customers. Contract liabilities relate to billings in advance of performance under the contracts. Contract liabilities are recognized as revenue when performance obligations have been performed. During the year ended June 30, 2022, the Company recognized revenue of \$13 million related to customer payments that were included in the Consolidated Balance Sheets as of June 30, 2021. As of June 30, 2022 and June 30, 2021, the Company had \$69 million and \$40 million, respectively, of contract liabilities recorded in the Consolidated Balance Sheets.

Note 5. Inventories

The components of inventories were as follows:

June 30, (\$000)	2022	2021
Raw materials	\$ 318,758	\$ 211,890
Work in progress	408,405	336,391
Finished goods	175,396	147,547
Total Inventories	<u>\$ 902,559</u>	<u>\$ 695,828</u>

Note 6. Property, Plant & Equipment

Property, plant & equipment consists of the following:

June 30, <i>(\$000)</i>	2022	2021
Land and land improvements	\$ 19,368	\$ 20,454
Buildings and improvements	415,530	419,157
Machinery and equipment	1,651,762	1,483,183
Construction in progress	271,605	136,544
Finance lease right-of-use asset	25,000	25,000
	<u>2,383,265</u>	<u>2,084,338</u>
Less accumulated depreciation	(1,020,070)	(841,432)
Property, plant, and equipment, net	<u>\$ 1,363,195</u>	<u>\$ 1,242,906</u>

Included in the table above is a building acquired under a finance lease. As of June 30, 2022 and June 30, 2021, the accumulated depreciation of the finance lease ROU asset was \$9 million and \$7 million, respectively.

Note 7. Goodwill and Other Intangible Assets

Goodwill represents the excess of the cost over the net tangible and identifiable intangible assets of acquired businesses. Identifiable intangible assets acquired in business combinations are recorded based upon fair value at the date of acquisition.

Changes in the carrying amount of goodwill were as follows (\$000):

	Year Ended June 30, 2022			Year Ended June 30, 2021		
	Photonic Solutions	Compound Semiconductors	Total	Photonic Solutions	Compound Semiconductors	Total
Balance-beginning of period	\$1,053,028	\$ 243,699	\$ 1,296,727	\$1,052,494	\$ 186,515	\$ 1,239,009
Goodwill acquired	—	—	—	—	54,634	54,634
Finisar measurement period adjustments	—	—	—	(4,901)	—	(4,901)
Foreign currency translation	(4,285)	(6,683)	(10,968)	5,435	2,550	7,985
Balance-end of period	<u>\$1,048,743</u>	<u>\$ 237,016</u>	<u>\$ 1,285,759</u>	<u>\$1,053,028</u>	<u>\$ 243,699</u>	<u>\$ 1,296,727</u>

The gross carrying amount and accumulated amortization of the Company's intangible assets other than goodwill as of June 30, 2022 and 2021 were as follows (\$000):

	June 30, 2022			June 30, 2021		
	Gross Carrying Amount	Accumulated Amortization	Net Book Value	Gross Carrying Amount	Accumulated Amortization	Net Book Value
Technology	\$ 473,845	\$ (144,409)	\$ 329,436	\$ 476,200	\$ (106,802)	\$ 369,398
Trade Names	22,536	(7,454)	15,082	22,660	(6,233)	16,427
Customer Lists	464,880	(173,994)	290,886	469,154	(136,519)	332,635
Other	1,563	(1,563)	—	1,576	(1,576)	—
Total	<u>\$ 962,824</u>	<u>\$ (327,420)</u>	<u>\$ 635,404</u>	<u>\$ 969,590</u>	<u>\$ (251,130)</u>	<u>\$ 718,460</u>

Amortization expense recorded on the intangible assets for the fiscal years ended June 30, 2022, 2021 and 2020 was \$80 million, \$82 million, and \$64 million, respectively. The technology intangible assets are being amortized over a range of 60 to 240 months with a weighted-average remaining life of approximately 153 months and the amortization is recorded in cost of goods sold in our Consolidated Statements of Earnings (Loss). The customer lists are being amortized over 60 to 240 months with a weighted-average remaining life of approximately 135 months and the amortization is recorded in SG&A in our Consolidated Statements of Earnings (Loss).

In connection with past acquisitions, the Company acquired trade names with indefinite lives. The carrying amount of these trade names of \$14 million as of June 30, 2022 is not amortized but tested annually for impairment. The Company completed its impairment test of these trade names with indefinite lives in the fourth quarter of fiscal years 2022 and 2021. Based on the results of these tests, the trade names were not impaired.

The estimated amortization expense for existing intangible assets for each of the five succeeding years is as follows (\$000):

Year Ending June 30,		
2023	\$	77,480
2024		75,607
2025		74,119
2026		72,265
2027		70,495

Note 8. Debt

The components of debt for the periods indicated were as follows (\$000):

	June 30, 2022	June 30, 2021
Term A Facility, interest at LIBOR, as defined, plus 1.375%	\$ 995,363	\$ 1,057,412
Debt issuance costs, Term A Facility and Revolving Credit Facility	(18,396)	(25,191)
5.000% Senior Notes	990,000	—
Debt issuance costs and discount, Senior Notes	(7,703)	—
0.50% Convertible Senior Notes, assumed in the Finisar acquisition	—	14,888
0.25% Convertible Senior Notes	341,501	344,969
Debt issuance costs and discount, 0.25% Convertible Senior Notes	(339)	(16,937)
Total debt	2,300,426	1,375,141
Current portion of long-term debt	(403,212)	(62,050)
Long-term debt, less current portion	<u>\$ 1,897,214</u>	<u>\$ 1,313,091</u>

The scheduled maturities of principal amounts of debt obligations for the next five years and thereafter is as follows (\$000):

	Year Ending June 30,
2023	\$ 403,551
2024	62,050
2025	871,263
2026	—
2027	—
Thereafter	990,000
Total	<u>\$ 2,326,864</u>

Senior Credit Facilities

Through June 30, 2022, the Company had Senior Credit Facilities with Bank of America, N.A., as Administrative Agent, Swing Line Lender and an L/C Issuer, and the other lenders party thereto.

The credit agreement governing the Senior Credit Facilities (the "Credit Agreement") provides for senior secured financing of \$2.425 billion in the aggregate, consisting of

- (i) Aggregate principal amount of \$1,255 million for a five-year senior secured first-lien term A loan facility (the "Term A Facility"),
- (ii) Aggregate principal amount of \$720 million for a seven-year senior secured term B loan facility (the "Term B Facility" and together with the Term A Facility, the "Term Loan Facilities"), which was repaid in full during the quarter ended September 30, 2020, and
- (iii) Aggregate principal amount of \$450 million for a five-year senior secured first-lien revolving credit facility (the "Revolving Credit Facility" and together with the Term Loan Facilities, the "Senior Credit Facilities").

The Credit Agreement also provides for a letter of credit sub-facility not to exceed \$25 million and a swing loan sub-facility initially not to exceed \$20 million.

The Company is obligated to repay the outstanding principal amount of the Term A Facility in quarterly installments equal to 1.25% of the initial aggregate principal amount of the Term A Facility, with the remaining outstanding balance due and payable on the fifth anniversary of September 24, 2019 (the "Closing Date"). The Company is obligated to repay the outstanding

principal amount of the Revolving Credit Facility, if any, on the fifth anniversary of the Closing Date. Notwithstanding the foregoing, all amounts outstanding under the Senior Credit Facilities will become due and payable 120 days prior to the maturity of the II-VI Convertible Notes if (i) the II-VI Convertible Notes remain outstanding and (ii) the Company has insufficient cash and borrowing availability under the Revolving Credit Facility to repay the principal amount of the II-VI Convertible Notes. The II-VI Convertible Notes are included in the current portion of long-term debt. The Company has sufficient cash to repay the principal amount of the II-VI Convertible Notes, therefore the Senior Credit Facilities remain classified as long-term obligations in the Consolidated Balance Sheets.

The Company's obligations under the Senior Credit Facilities are guaranteed by each of the Company's material existing or future direct and indirect domestic subsidiaries, including Finisar Corporation ("Finisar") and its domestic subsidiaries (collectively, the "Guarantors"), subject to certain exceptions. Borrowings under the Senior Credit Facilities are secured by a first priority lien in substantially all of the assets of the Company and the Guarantors, subject to certain exceptions, including that no real property secures the Senior Credit Facilities.

Amounts outstanding under the Senior Credit Facilities will bear interest at a rate per annum equal to an applicable margin over a eurocurrency rate or an applicable margin over a base rate determined by reference to the highest of (a) the federal funds rate plus 0.50%, (b) Bank of America, N.A.'s prime rate and (c) a eurocurrency rate plus 1.00%, in each case as calculated in accordance with the terms of the Credit Agreement. The applicable interest rate would increase under certain circumstances relating to events of default. The Company has entered into an interest rate swap contract to hedge its exposure to interest rate risk on its variable rate borrowings under the Senior Credit Facilities. Refer to Note 15. Fair Value of Financial Instruments for further information regarding this interest rate swap.

The Credit Agreement contains customary affirmative and negative covenants with respect to the Senior Credit Facilities, including limitations with respect to liens, investments, indebtedness, dividends, mergers and acquisitions, dispositions of assets and transactions with affiliates. The Company will be obligated to maintain a consolidated interest coverage ratio (as calculated in accordance with the terms of the Credit Agreement) as of the end of each fiscal quarter of not less than 3.00 to 1.00. The Company will be obligated to maintain a consolidated total net leverage ratio (as calculated in accordance with the terms of the Credit Agreement) of not greater than (i) 5.00 to 1.00 for the first four fiscal quarters after the Closing Date, commencing with the first full fiscal quarter after the Closing Date, (ii) 4.50 to 1.00 for the fifth fiscal quarter through and including the eighth fiscal quarter after the Closing Date, and (iii) 4.00 to 1.00 for each subsequent fiscal quarter. As of June 30, 2022, the Company was in compliance with all financial covenants under the Credit Agreement.

On July 1, 2022, the Credit Agreement was terminated, and amounts borrowed under the Term A Facility were repaid in full using proceeds from the New Term Facilities (defined below).

New Senior Credit Facilities

In connection with entering into the Merger Agreement, II-VI obtained a fully underwritten financing commitment pursuant to a commitment letter, dated as of March 25, 2021, as further amended and restated on April 21, 2021 and October 25, 2021 (the "Amended and Restated Commitment Letter"), with JP Morgan Chase Bank, N.A., Citigroup Global Markets Inc., MUFG Bank, Ltd., MUFG Securities Americas Inc., PNC Capital Markets LLC, PNC Bank, National Association, HSBC Securities (USA) Inc., HSBC Bank USA, National Association, Citizens Bank, N.A., Mizuho Bank, Ltd., BMO Capital Markets Corp., Bank of Montreal, TD Securities (USA) LLC, The Toronto-Dominion Bank, New York Branch, TD Bank, N.A., and First National Bank of Pennsylvania (collectively, the "Commitment Parties") pursuant to which the Commitment Parties committed to provide up to \$5.0 billion in debt financing.

On July 1, 2022, II-VI entered into a Credit Agreement by and among the Company, the lenders, and other parties thereto, and JP Morgan Chase Bank, N.A., as administrative agent and collateral agent, which provides for senior secured financing of \$4.0 billion, consisting of a new term loan A credit facility (the "New Term A Facility") in an aggregate principal amount of \$850 million, a new term loan B credit facility (the "New Term B Facility") and, together with the New Term A Facility, the "New Term Facilities") in an aggregate principal amount of \$2,800 million, and a new revolving credit facility (the "New Revolving Credit Facility") in an aggregate principal amount of \$350 million, including a letter of credit sub-facility of up to \$50 million, in each case as contemplated under the Amended and Restated Commitment Letter. The New Term A Facility and the New Revolving Credit Facility will each bear interest at LIBOR subject to a 0.00% floor plus a range of 1.75% to 2.50%, based on the Company's total net leverage ratio. The New Term A Facility and the New Revolving Credit Facility borrowings are initially expected to bear interest at LIBOR plus 2.00%. The New Term B Facility will bear interest at LIBOR (subject to a 0.50% floor) plus 2.75%. In relation to the New Term B Facility, the Company incurred expense of \$34 million in the year ended June 30, 2022, which is included in interest expense in the Consolidated Statements of Earnings (Loss).

Proceeds of the loans borrowed under the New Term Facilities on July 1, 2022, together with other financing sources (including the Senior Notes) and cash on hand, were used to fund the cash portion of Merger consideration, the repayment of certain indebtedness (including the repayment in full of the Credit Agreement), and certain fees and expenses in connection with the Merger and otherwise for general corporate purposes.

The Company capitalized approximately \$17 million of debt issuance costs during the year ended June 30, 2022. These capitalized costs are presented within the prepaid and other current assets and other assets in the Consolidated Balance Sheets. Amortization of debt issuance costs related to the New Term Facilities for the year ended June 30, 2022 totaled \$5 million and is included in interest expense in the Consolidated Statements of Earnings (Loss).

5.000% Senior Notes due 2029

On December 10, 2021, the Company issued \$990 million aggregate principal amount of 5.000% Senior Notes due 2029 (the "Senior Notes") pursuant to the indenture, dated as of December 10, 2021 (the "Indenture"), between the Company and U.S. Bank National Association, as trustee (the "Trustee"). The Senior Notes were offered and sold either to persons reasonably believed to be "qualified institutional buyers" pursuant to Rule 144A under the Securities Act of 1933, as amended (the "Securities Act"), or to persons outside the United States under Regulation S of the Securities Act. The Senior Notes are guaranteed by each of the Company's domestic subsidiaries that guarantee its obligations under the Senior Credit Facilities. Interest on the Senior Notes will be payable on December 15 and June 15 of each year, commencing on June 15, 2022, at a rate of 5.000% per annum. The Senior Notes will mature on December 15, 2029.

If (i) the Merger had not been consummated on or prior to 11:59 p.m., Eastern Time, on December 15, 2022 or (ii) the Company informed the Trustee, in writing or otherwise announced in writing that the Merger was no longer being pursued and/or the Merger Agreement had been terminated, the Company would have been required to redeem all of the outstanding Senior Notes at a redemption price equal to 100% of the principal amount of the Senior Notes, plus accrued and unpaid interest, if any, to, but excluding, the applicable redemption date (the "Special Mandatory Redemption Date"). Pursuant to the terms of the Indenture, prior to the earlier of (i) the date of the consummation of the Merger and (ii) the Special Mandatory Redemption Date, the gross proceeds from the Senior Notes could not be used for any purpose, and therefore \$990 million of restricted cash was classified within cash, cash equivalents, and restricted cash on the Consolidated Balance Sheets at June 30, 2022.

On or after December 15, 2024, the Company may redeem the Senior Notes, in whole at any time or in part from time to time, at the redemption prices set forth in the Indenture, plus accrued and unpaid interest, if any, to, but excluding, the applicable redemption date. In addition, at any time prior to December 15, 2024, the Company may redeem the Senior Notes, at its option, in whole at any time or in part from time to time, at a redemption price equal to 100% of the principal amount of the Senior Notes redeemed, plus a "make-whole" premium set forth in the Indenture, plus accrued and unpaid interest, if any, to, but excluding, the applicable redemption date. Notwithstanding the foregoing, at any time and from time to time prior to December 15, 2024, the Company may redeem up to 40% of the aggregate principal amount of the Senior Notes using the proceeds of certain equity offerings as set forth in the Indenture, at a redemption price equal to 105.000% of the principal amount thereof, plus accrued and unpaid interest, if any, to, but excluding, the applicable redemption date.

The Indenture contains customary covenants and events of default, including default relating to among other things, payment default, failure to comply with covenants or agreements contained in the Indenture or the Senior Notes and certain provisions related to bankruptcy events. As of June 30, 2022, the Company was in compliance with all covenants under the Indenture.

Bridge Loan Commitment

Subject to the terms of the Amended and Restated Commitment Letter, the commitment parties thereto committed to provide, in addition to the New Term Facilities and the New Revolving Credit Facilities, a senior unsecured bridge loan facility in an aggregate principal amount of \$990 million (the "Bridge Loan Commitment"). As a result of the issuance of the Senior Notes, the Bridge Loan Commitment was terminated. During the year ended June 30, 2022, the Company incurred expenses of \$3 million related to the Bridge Loan Commitment, which is included in interest expense in the Consolidated Statements of Earnings (Loss).

0.50% Finisar Convertible Notes

On November 1, 2021, Finisar delivered to holders of all outstanding 0.50% Convertible Senior Notes due 2036 issued by Finisar (the "Finisar Notes") a notice of redemption pursuant to which Finisar provided notice that it would redeem on December 22, 2021 all of the Finisar Notes that were not repurchased by Finisar on December 15, 2021 pursuant to the terms of the Finisar Notes and that remained outstanding on December 22, 2021. On December 15, 2021, Finisar repurchased \$15 million aggregate principal amount of Finisar Notes that were tendered for repurchase by holders of Finisar Notes. Each holder of Finisar Notes that remained outstanding after the repurchase on December 15, 2021 had the option to elect to receive

(i) a redemption price equal to 100% of the principal amount of the redeemed Finisar Notes, plus accrued and unpaid interest on the redeemed Finisar Notes or (ii) to convert all or any portion of the Finisar Notes held by such holder in accordance with the terms of the Finisar Notes until the close of business on December 21, 2021. Based on the elections of such holders, the Company issued 45 shares of common stock and paid approximately \$0.3 million in the aggregate on December 22, 2021 to settle the conversion of the Finisar Notes that were converted and to redeem all remaining outstanding Finisar Notes.

0.25% Convertible Senior Notes

In August 2017, the Company issued and sold \$345 million aggregate principal amount of the II-VI Convertible Notes in a private placement to qualified institutional buyers within the meaning of Rule 144A under the Securities Act of 1933, as amended.

Originally, the Company had separately accounted for the value of the conversion option as an equity component, and the resulting debt discount was amortized as additional non-cash interest expense.

With the adoption of ASU 2020-06 on July 1, 2021, the Company reversed that accounting, electing to use the modified retrospective method. The adoption resulted in an increase of \$15 million to the current portion of long-term debt, a decrease of \$3 million to deferred income taxes, and a decrease of \$11 million to shareholders' equity. If the Company had not adopted ASU 2020-06, additional interest expense included in the Consolidated Statements of Earnings would have been \$13 million, and the impact of the change on basic and diluted earnings per share is a decrease of \$0.09 and \$0.02, respectively.

The initial conversion rate is 21.25 shares of II-VI Common Stock per \$1,000 principal amount of II-VI Convertible Notes, which is equivalent to an initial conversion price of \$47.06 per share of II-VI Common Stock. Throughout the term of the II-VI Convertible Notes, the conversion rate may be adjusted upon the occurrence of certain events. The if-converted value of the II-VI Convertible Notes amounted to \$370 million as of June 30, 2022 and \$532 million as of June 30, 2021 (based on the Company's closing stock price on the last trading day of the fiscal periods then ended).

Prior to the close of business on the business day immediately preceding June 1, 2022, the II-VI Convertible Notes were convertible only under the following circumstances:

- (i) during any fiscal quarter commencing after the fiscal quarter ending on December 31, 2017 (and only during such fiscal quarter), if the last reported sale price of the II-VI Common Stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding fiscal quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
- (ii) during the five business day period immediately after any five consecutive trading day period (the "measurement period") in which the trading price per \$1,000 principal amount of II-VI Convertible Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the II-VI Common Stock and the conversion rate on each such trading day; or
- (iii) upon the occurrence of certain specified corporate events.

On or after June 1, 2022 until the close of business on the business day immediately preceding September 1, 2022 (the "Maturity Date"), holders may convert their II-VI Convertible Notes at any time, regardless of the foregoing circumstances. Upon conversion occurring prior to June 1, 2022, the Company will pay or deliver, as the case may be, cash, shares of II-VI Common Stock or a combination of cash and shares of II-VI Common Stock, at the Company's election, to settle conversions. For conversions occurring on or after June 1, 2022, the Company will deliver shares of II-VI Common Stock to settle conversions.

Holders of the II-VI Convertible Notes will not receive any cash payment representing accrued and unpaid interest upon conversion of a II-VI Convertible Note, other than as provided in the governing indenture. Accrued but unpaid interest will be deemed to be paid in full upon conversion rather than cancelled, extinguished or forfeited, other than as provided in the governing indenture. Notes were convertible during three quarters in the year ended June 30, 2022. Because the last reported sale price of II-VI Common Stock for at least 20 trading days during the period of 30 consecutive trading days ending on the last trading day of the year ended June 30, 2022 was equal to or greater than 130% of the applicable conversion price on each applicable trading day, the II-VI Convertible Notes were convertible at the option of the holders thereof during the fiscal period ranging from April 1, 2022 to May 31, 2022. As of June 1, 2022, the II-VI Convertible Notes become convertible regardless of compliance with any other conversion trigger until the close of business on the business day immediately preceding the Maturity Date. For the year ended June 30, 2022, conversions totaled \$3 million of aggregate principal amount, resulting in the issuance of 74 thousand shares of II-VI Common Stock.

The following table sets forth total interest expense recognized related to the II-VI Convertible Notes for the years ended June 30, 2022, 2021 and 2020 (\$000):

	Year Ended June 30, 2022	Year Ended June 30, 2021	Year Ended June 30, 2020
0.25% contractual coupon	\$ 875	\$ 874	\$ 876
Amortization of debt discount and debt issuance costs including initial purchaser discount	1,947	13,748	13,172
Interest expense	<u>\$ 2,822</u>	<u>\$ 14,622</u>	<u>\$ 14,048</u>

The effective interest rate on the liability component was 1% for the year ended June 30, 2022, and 5% for the years ended June 30, 2021 and 2020.

Aggregate Availability

The Company had aggregate availability of \$450 million under its Revolving Credit Facility as of June 30, 2022.

Weighted Average Interest Rate

The weighted average interest rate of total borrowings was 2% and 1% for the years ended June 30, 2022 and 2021, respectively

Note 9. Income Taxes

The components of earnings (loss) before income taxes were as follows:

Year Ended June 30, (\$000)	2022	2021	2020
U.S. income (loss)	\$ (62,721)	\$ 21,692	\$ (302,027)
Non-U.S. income	344,528	330,898	238,099
Earnings (loss) before income taxes	<u>\$ 281,807</u>	<u>\$ 352,590</u>	<u>\$ (63,928)</u>

The components of income tax expense were as follows:

Year Ended June 30, (\$000)	2022	2021	2020
Current:			
Federal	\$ 1,569	\$ 415	\$ 7
State	768	1,632	496
Foreign	52,865	53,362	45,052
Total Current	<u>\$ 55,202</u>	<u>\$ 55,409</u>	<u>\$ 45,555</u>
Deferred:			
Federal	\$ (7,185)	\$ 13,744	\$ (43,955)
State	(1,215)	(431)	1,007
Foreign	246	(13,684)	494
Total Deferred	<u>\$ (8,154)</u>	<u>\$ (371)</u>	<u>\$ (42,454)</u>
Total Income Tax Expense	<u>\$ 47,048</u>	<u>\$ 55,038</u>	<u>\$ 3,101</u>

Principal items comprising deferred income taxes were as follows:

June 30,	2022	2021
<i>(\$000)</i>		
Deferred income tax assets		
Inventory capitalization	\$ 20,562	\$ 20,753
Interest rate swap	—	6,347
Non-deductible accruals	8,403	7,437
Accrued employee benefits	11,320	14,025
Net-operating loss and credit carryforwards	149,949	163,717
Share-based compensation expense	10,125	8,400
Other	3,565	1,832
Deferred revenue	12,416	7,124
Right of use asset	29,817	33,341
Valuation allowances	(55,420)	(53,765)
Total deferred income tax assets	\$ 190,737	\$ 209,211
Deferred income tax liabilities		
Tax over book accumulated depreciation	\$ (28,701)	\$ (32,692)
Intangible assets	(134,972)	(153,582)
Interest rate swap	(6,105)	—
Interest rate cap	(4,102)	—
Tax on unremitted earnings	(26,383)	(21,569)
Convertible debt	—	(3,321)
Lease liability	(28,983)	(32,053)
Other	(7,036)	(6,458)
Total deferred income tax liabilities	\$ (236,282)	\$ (249,675)
Net deferred income taxes	\$ (45,545)	\$ (40,464)

The reconciliation of income tax expense at the statutory U.S. federal rate to the reported income tax expense is as follows:

Year Ended June 30,	2022	%	2021	%	2020	%
<i>(\$000)</i>						
Taxes at statutory rate	\$ 59,179	21	\$ 74,044	21	\$ (13,425)	21
Increase (decrease) in taxes resulting from:						
State income taxes-net of federal benefit	(339)	—	1,246	—	1,194	(2)
Taxes on non U.S. earnings	(2,704)	(1)	(26,557)	(7)	(915)	1
Valuation allowance	(1,513)	(1)	(3,720)	(1)	(9,365)	15
Research and manufacturing incentive deductions and credits	(24,341)	(9)	(22,968)	(6)	(15,836)	25
Stock compensation	2,095	1	(2,500)	(1)	4,334	(7)
GILTI and FDII	4,866	2	27,369	8	36,067	(56)
Other	9,805	4	8,124	2	1,047	(2)
	\$ 47,048	17	\$ 55,038	16	\$ 3,101	(5)

The Company previously considered the earnings in non-U.S. subsidiaries to be indefinitely reinvested and, accordingly, recorded no deferred income taxes. As a result of the Tax Cuts and Jobs Act (the "Tax Act"), among other things, the Company determined it will repatriate earnings for all non-U.S. subsidiaries with cash in excess of working capital needs. Such distributions could potentially be subject to U.S. state tax in certain states and foreign withholding taxes. Foreign currency gains (losses) related to the translation of previously taxed earnings from functional currency to U.S. dollars could also be subject to U.S. tax when distributed. The Company has estimated the associated withholding tax to be \$26 million.

Additionally, the Tax Act introduced a new category of income, referred to as global intangible low tax income ("GILTI"), which requires a current year inclusion of earnings of controlled foreign corporations taxed at a low rate and without a significant fixed asset base. The Company made a final accounting policy election to treat taxes due from future inclusions in U.S. taxable income related to GILTI as a current period expense when incurred.

During the fiscal years ended June 30, 2022, 2021, and 2020, cash paid by the Company for income taxes was \$50 million, \$60 million, and \$40 million, respectively.

Our foreign subsidiaries in various tax jurisdictions operate under tax holiday arrangements. The impact of the tax holidays on our effective rate is a reduction in the rate of 1.60%, 3.22% and (8.91)% for the fiscal years ended June 30, 2022, 2021 and 2020, respectively, and the impact of the tax holidays on diluted earnings per share is \$0.04, \$0.10, and \$0.07 for the fiscal years ended June 30, 2022, 2021, and 2020, respectively. The tax holiday related to II-VI Malaysia Advanced Manufacturing Center Sdn. Bhd will end during the fiscal year ended June 30, 2026, the tax holiday related to certain II-VI Laser Enterprise Philippines, Inc.'s business lines will end during the fiscal year ended June 30, 2026, and the tax holiday related to II-VI Vietnam Co., Ltd will end during the fiscal year ended June 30, 2024.

The Company has the following gross operating loss carryforwards and tax credit carryforwards as of June 30, 2022:

Type	Amount	Expiration Date
(\$000)		
Tax credit carryforwards:		
Federal research and development credits	\$ 83,063	June 2023-June 2042
Foreign tax credits	3,540	June 2030-June 2032
State tax credits	15,632	June 2023-June 2037
State tax credits (indefinite)	39,243	Indefinite
Operating loss carryforwards:		
Loss carryforwards - federal	\$ 42,012	June 2023-June 2036
Loss carryforwards - state	182,178	June 2023-June 2042
Loss carryforwards - state (indefinite)	25,899	Indefinite
Loss carryforwards - foreign	15,608	June 2023-June 2032
Loss carryforwards - foreign (indefinite)	38,600	Indefinite

The Company has recorded a valuation allowance against the majority of the foreign and state loss and credit carryforwards. The Company's U.S. federal loss carryforwards, federal research and development credit carryforwards, and certain state tax credits resulting from the Company's acquisitions are subject to various annual limitations under Section 382 of the U.S. Internal Revenue Code.

Changes in the liability for unrecognized tax benefits for the fiscal years ended June 30, 2022, 2021 and 2020 were as follows:

	2022	2021	2020
(\$000)			
Beginning balance	\$ 38,025	\$ 42,803	\$ 11,520
Increases in current year tax positions	1,803	3,940	1,506
Acquired business	—	5,341	31,791
Settlements	—	(7,514)	—
Expiration of statute of limitations	(2,417)	(6,545)	(2,014)
Ending balance	<u>\$ 37,411</u>	<u>\$ 38,025</u>	<u>\$ 42,803</u>

The Company classifies all estimated and actual interest and penalties as income tax expense. During fiscal years 2022, 2021 and 2020, there was \$0.4 million, \$0.3 million and \$0.6 million of interest and penalties within income tax expense, respectively. The Company had \$3 million, \$3 million and \$4 million of interest and penalties accrued at June 30, 2022, 2021 and 2020, respectively. The Company has classified the uncertain tax positions as non-current income tax liabilities, as the amounts are not expected to be paid within one year. Including tax positions for which the Company determined that the tax position would not meet the more likely than not recognition threshold upon examination by the tax authorities based upon the technical merits of the position, the total estimated unrecognized tax benefit that, if recognized, would affect our effective tax rate, was approximately \$25 million, \$26 million and \$24 million at June 30, 2022, 2021 and 2020, respectively. The Company expects a decrease of \$2 million of unrecognized tax benefits during the next 12 months due to the expiration of statutes of limitation.

Fiscal years 2019 to 2022 remain open to examination by the Internal Revenue Service, fiscal years 2018 to 2022 remain open to examination by certain state jurisdictions, and fiscal years 2010 to 2022 remain open to examination by certain foreign taxing jurisdictions. The Company is currently under examination for certain subsidiary companies in India for the year ended March 31, 2016; Philippines for the years ended June 2018 and 2019; and Germany for the years ended June 30, 2012 through June 30, 2018. The Company believes its income tax reserves for these tax matters are adequate.

Note 10. Equity and Redeemable Preferred Stock

The Company has 5 million shares of preferred stock authorized, of which 2.3 million shares have been designated and issued as Series A Mandatory Convertible Preferred Stock, no par value per share, and 215,000 shares have been designated as Series B Convertible Preferred Stock, no par value per share, of which 75,000 shares were issued at June 30, 2022 and 2021.

Mandatory Convertible Preferred Stock

In July 2020, the Company issued of 2,300,000 shares of 6.00% Series A Mandatory Convertible Preferred, no par value per share ("Mandatory Convertible Preferred Stock").

Unless previously converted, each outstanding share of Mandatory Convertible Preferred Stock will automatically convert on the Mandatory Conversion Date (as defined in the Statement with Respect to Shares establishing the Mandatory Convertible Preferred Stock) into a number of shares of II-VI Common Stock equal to not more than 4.6512 shares of II-VI Common Stock and not less than 3.8760 shares of II-VI Common Stock (the "Minimum Conversion Rate"), depending on the applicable market value of the II-VI Common Stock, determined in accordance with the terms of the Mandatory Convertible Preferred Stock and subject to certain anti-dilution adjustments.

Other than in the event of one of certain fundamental changes, a holder of Mandatory Convertible Preferred Stock may, at any time prior to July 1, 2023, elect to convert such holder's shares of Mandatory Convertible Preferred Stock, in whole or in part (but in no event less than one share of Mandatory Convertible Preferred Stock), at the Minimum Conversion Rate per share of Mandatory Convertible Preferred Stock, subject to certain anti-dilution adjustments.

If one of certain fundamental changes occurs on or prior to July 1, 2023, holders of the Mandatory Convertible Preferred Stock will have the right to convert their shares of Mandatory Convertible Preferred Stock, in whole or in part (but in no event less than one share of the Mandatory Convertible Preferred Stock), into shares of II-VI Common Stock at the conversion rate determined in accordance with the terms of the Mandatory Convertible Preferred Stock during the period beginning on, and including, the effective date of such change and ending on, and including, the date that is 20 calendar days after the effective date of such fundamental change (or, if later, the date that is 20 calendar days after holders receive notice of such fundamental change, but in no event later than July 1, 2023). Holders who convert their shares of the Mandatory Convertible Preferred Stock during that period will also receive a dividend make-whole amount and, to the extent there is any, the accumulated dividend amount, in each case as calculated in accordance with the terms of the Mandatory Convertible Preferred Stock.

Upon issuance of the Mandatory Convertible Preferred Stock, the Company used a Monte Carlo simulation model to estimate the future market value of the II-VI Common Stock on the mandatory conversion date, based on the following inputs:

Expected Volatility	50% - 55%
Cost of Equity	14% - 17%
Dividend Yield	none

Expected volatility is based on the historical volatility of II-VI Common Stock, taking into consideration the mean-reverting tendency of volatility and the expected term of the Mandatory Convertible Preferred Stock, as well as traded option contracts for II-VI Common Stock. The cost of equity was calculated over a three-year term, assuming a risk-free interest rate of 0.2% derived from the average U.S. Treasury Note rate during the period. The dividend yield of zero is based on the fact that the Company has never paid cash dividends on II-VI Common Stock and has no current intention to pay cash dividends on II-VI Common Stock in the future.

The Company recognized \$28 million and \$27 million of preferred stock dividends during fiscal years 2022 and 2021, respectively, associated with the Mandatory Convertible Preferred Stock, which were presented as a reduction to retained earnings on the Consolidated Balance Sheet as of June 30, 2022.

The following table presents dividends per share and dividends recognized for the years ended June 30, 2022, and June 30, 2021:

	Year Ended June 30, 2022	Year Ended June 30, 2021
Dividends per share	12.00	11.80
Series A Mandatory Convertible Preferred Stock dividends (\$000)	27,600	27,140

Redeemable Convertible Preferred Stock

In connection with entering into the Merger Agreement, II-VI entered into an Amended and Restated Investment Agreement, dated as of March 30, 2021 (the "Investment Agreement"), with BCPE Watson (DE) SPV, LP, an affiliate of Bain Capital Private Equity, LP (the "Investor"). Pursuant to the terms of the Investment Agreement, on March 31, 2021, II-VI issued, sold, and delivered to the Investor 75,000 shares of a new Series B-1 Convertible Preferred Stock of the Company, no par value per share ("II-VI Series B-1 Convertible Preferred Stock"), for \$10,000 per share (the "Equity Per Share Price"), resulting in an aggregate purchase price of \$750 million.

The shares of II-VI Series B-1 Convertible Preferred Stock accrue dividends at 5.00% per annum, subject to increase if II-VI defaults on payment obligations with respect to the New II-VI Convertible Preferred Stock, not to exceed 14% per annum. Until the fourth anniversary of March 31, 2021 (the "Initial Issue Date"), dividends are payable solely in-kind. After the fourth anniversary of the Initial Issue Date, dividends are payable on the applicable series, at the Company's option, in cash, in-kind, or as a combination of both.

The shares of II-VI Series B-1 Convertible Preferred Stock are convertible into shares of II-VI Common Stock as follows:

- at the election of the holder, at a conversion price of \$85.00 per share ("Conversion Price"), after the earliest to occur of (i) the issuance of shares of II-VI Series B-2 Convertible Preferred Stock upon the closing of the Coherent acquisition, (ii) the termination of the Merger Agreement or (iii) the delivery by II-VI to the Investor of an offer to repurchase the II-VI Series B-1 Convertible Preferred Stock upon the occurrence of a Fundamental Change (as defined in the Statement); and
- at the election of the Company, any time following March 31, 2024, at the then-applicable Conversion Price if the volume-weighted average price of II-VI Common Stock exceeds 150% of the then-applicable Conversion Price for 20 trading days out of any 30 consecutive trading days.

The issued shares of II-VI Series B-1 Convertible Preferred Stock have voting rights, voting as one class with the II-VI Common Stock, on an as-converted basis, subject to limited exceptions.

On or at any time after March 31, 2031:

- each holder has the right to require the Company to redeem all of their II-VI Series B-1 Convertible Preferred Stock, for cash, at a redemption price per share equal to the sum of the Stated Value for such shares (as defined in the Statement) plus an amount equal to all accrued or declared and unpaid dividends on such shares that had not previously been added to the Stated Value (such price the "Redemption Price," and such right the "Put Right"), and
- the Company has the right to redeem, in whole or in part, on a pro rata basis from all holders based on the aggregate number of shares of II-VI Series B-1 Convertible Preferred Stock outstanding, for cash, at the Redemption Price.

In connection with any Fundamental Change, and subject to the procedures set forth in the Statement with Respect to Shares establishing the new II-VI Convertible Preferred Stock, the Company must, or will cause the survivor of a Fundamental Change to, make an offer to repurchase, at the option and election of the holder thereof, each share of II-VI Series B-1 Convertible Preferred Stock then outstanding (the "Fundamental Change Repurchase Offer") at a purchase price per share in cash equal to (i) the Stated Value for such shares plus an amount equal to all accrued or declared and unpaid dividends on such shares that had not previously been added to the Stated Value as of the date of repurchase plus (ii) if prior to March 31, 2026, the aggregate amount of all dividends that would have been paid (subject to certain exceptions), from the date of repurchase through March 31, 2026.

If the Company defaults on a payment obligation with respect to the II-VI Series B-1 Convertible Preferred Stock and such default is not cured within 30 days, the dividend rate will increase to 8% per annum and will be increased by an additional 2% per annum each quarter the Company remains in default, not to exceed 14% per annum.

The II-VI Series B-1 Convertible Preferred Stock is redeemable for cash outside of the control of the Company upon the exercise of the Put Right, and upon a Fundamental Change, and is therefore classified as mezzanine equity.

The II-VI Series B-1 Convertible Preferred Stock is initially measured at fair value less issuance costs, accreted to its redemption value over a 10-year period (using the effective interest method) with such accretion accounted for as deemed dividends and reductions to Net Earnings (Loss) available to Common Shareholders.

The Company recognized \$41 million of preferred stock dividends during the fiscal year ended June 30, 2022, which were presented as a reduction to retained earnings on the Consolidated Balance Sheets as of June 30, 2022.

The following table presents dividends per share and dividends recognized for the years ended June 30, 2022, and June 30, 2021:

	Year Ended June 30, 2022	Year Ended June 30, 2021
Dividends per share	541.66	134.55
Dividends (\$000)	38,598	9,583
Deemed dividends (\$000)	2,027	508

Subject to the terms and conditions of the Investment Agreement, among other things, the Company and the Investor also agreed that the Company would issue, sell and deliver to the Investor:

- 105,000 shares of a new Series B-2 Convertible Preferred Stock of the Company, no par value per share ("II-VI Series B-2 Convertible Preferred Stock," and together with the II-VI Series B-1 Convertible Preferred Stock, "New II-VI Convertible Preferred Stock"), for a purchase price per share equal to the Equity Per Share Price, resulting in an aggregate purchase price of \$1.05 billion, immediately prior to closing of the Coherent acquisition; and
- immediately prior to the closing of the Coherent acquisition, if elected by the Company and agreed by the Investor, up to an additional 35,000 shares of II-VI Series B-2 Convertible Preferred Stock (the "Upsize Shares") for a purchase price per share equal to the Equity Per Share Price, resulting in an aggregate maximum purchase price for the Upsize Shares of \$350 million.

Following the Company's provision of notice to the Investor of its election to offer the Upsize Shares, the Investor informed the Company on June 8, 2021, of its agreement to purchase the Upsize Shares from the Company immediately prior to the closing of the Coherent acquisition, increasing the Investor's total equity commitment to II-VI pursuant to the Investment Agreement to \$2.15 billion.

On July 1, 2022, II-VI issued and sold 140,000 shares of II-VI Series B-2 Convertible Preferred Stock, for \$10,000 per share and an aggregate purchase price of \$1.4 billion.

Note 11. Earnings Per Share

Basic earnings (loss) per common share is computed by dividing net earnings (loss) available to common shareholders by the weighted-average number of shares of common stock outstanding during the period.

The diluted earnings (loss) per common share is computed by dividing the diluted earnings (loss) available to common shareholders by the weighted-average number of shares of common stock and potentially dilutive shares of common stock

outstanding during the period. The dilutive effect of equity awards is calculated based on the average stock price for each fiscal period, using the treasury stock method. For the fiscal years ended June 30, 2022 and June 30, 2021, diluted shares outstanding include the dilutive effect of the potential shares of the Company's common stock issuable from stock options, performance and restricted shares. For the fiscal year ended June 30, 2022 and June 30, 2021, the diluted shares outstanding also include the dilutive effect of the potential shares of the Company's common stock issuable upon conversion of outstanding convertible debt.

The following is a reconciliation of the numerators and denominators of the basic and diluted earnings (loss) per share computations for the periods presented (\$000):

Year Ended June 30,	2022	2021	2020
<i>(\$000 except per share)</i>			
Numerator			
Net earnings (loss)	\$ 234,759	\$ 297,552	\$ (67,029)
Deduct Series A preferred stock dividends	(27,600)	(27,140)	—
Deduct Series B dividends and deemed dividends	(40,625)	(10,091)	—
Basic earnings (loss) available to common shareholders	<u>\$ 166,534</u>	<u>\$ 260,321</u>	<u>\$ (67,029)</u>
<i>Effect of dilutive securities:</i>			
Add back interest on II-VI Convertible Notes (net of tax)	\$ 2,229	\$ 12,264	\$ —
Diluted earnings (loss) available to common shareholders	<u>\$ 168,763</u>	<u>\$ 272,585</u>	<u>\$ (67,029)</u>
Denominator			
Weighted average shares	106,189	104,151	84,828
<i>Effect of dilutive securities</i>			
Common stock equivalents	3,012	3,552	—
II-VI Convertible Notes	7,312	7,331	—
Diluted weighted average common shares	<u>116,513</u>	<u>115,034</u>	<u>84,828</u>
Basic earnings (loss) per common share	<u>\$ 1.57</u>	<u>\$ 2.50</u>	<u>\$ (0.79)</u>
Diluted earnings (loss) per common share	<u>\$ 1.45</u>	<u>\$ 2.37</u>	<u>\$ (0.79)</u>

The following table presents potential shares of common stock excluded from the calculation of diluted net earnings (loss) per share, as their effect would have been antidilutive (in thousands of shares):

Year Ended June 30,	2022	2021	2020
Series A Mandatory Convertible Preferred Stock	8,915	8,915	—
Series B Redeemable Preferred Stock	9,162	2,230	—
II-VI Convertible Notes due 2022	—	—	7,331
Common stock equivalents	9,611	118	2,345
Total anti-dilutive shares	<u>27,688</u>	<u>11,263</u>	<u>9,676</u>

Note 12. Leases

We determine if an arrangement is a lease at inception for arrangements with an initial term of more than 12 months, and classify it as either finance or operating.

Finance leases are generally those that allow us to substantially utilize or pay for the entire asset over its estimated useful life. Finance leases assets are recorded in property, plant and equipment, net, and finance lease liabilities within other accrued liabilities and other liabilities on our Consolidated Balance Sheets. Finance lease assets are amortized in operating expenses on a straight-line basis over the shorter of the estimated useful lives of the assets or the lease term, with the interest component for lease liabilities included in interest expense and recognized using the effective interest method over the lease term.

Operating leases are recorded in other assets and operating lease liabilities, current and non-current on the Company's Consolidated Balance Sheets. Operating lease assets are amortized on a straight-line basis in operating expenses over the lease term.

The Company's lease liabilities are recognized based on the present value of the remaining fixed lease payments, over the lease term, using a discount rate of similarly secured borrowings available to the Company. For the purpose of lease liability measurement, we consider only payments that are fixed and determinable at the time of commencement. Any variable payments that depend on an index or rate are expensed as incurred. We account for non-lease components, such as common area maintenance, as a component of the lease, and include it in the initial measurement of our lease assets and corresponding liabilities. The Company's lease terms and conditions may include options to extend or terminate. An option is recognized when it is reasonably certain that we will exercise that option.

The Company's lease assets also include any lease payments made and exclude any lease incentives received prior to commencement. Our lease assets are tested for impairment in the same manner as long-lived assets used in operations. The following table presents lease costs, which include leases for arrangements with an initial term of more than 12 months, lease term, and discount rates (\$000):

	Year Ended June 30, 2022	Year Ended June 30, 2021	Year Ended June 30, 2020
Finance Lease Cost			
Amortization of right-of-use assets	\$ 1,671	\$ 1,667	\$ 1,667
Interest on lease liabilities	1,200	1,268	1,328
Total finance lease cost	2,871	2,935	2,995
Operating lease cost	36,716	37,361	32,466
Sublease income	507	1,471	368
Total lease cost	\$ 39,080	\$ 38,825	\$ 35,093
Cash Paid for Amounts Included in the Measurement of Lease Liabilities			
Operating cash flows from finance leases	1,200	1,268	1,328
Operating cash flows from operating leases	35,481	35,641	30,816
Financing cash flows from finance leases	1,290	1,152	1,026
Assets Obtained in Exchange for Lease Liabilities			
Right-of-use assets obtained in acquisitions	—	13,391	29,247
Right-of-use assets obtained in exchange for new operating lease liabilities	18,161	52,839	29,458
Total assets obtained in exchange for new operating lease liabilities	18,161	66,230	58,705
Weighted-Average Remaining Lease Term (in Years)			
Finance leases	9.5	10.5	11.5
Operating leases	6.6	7.0	7.2
Weighted-Average Discount Rate			
Finance leases	5.6 %	5.6 %	5.6 %
Operating leases	5.7 %	6.1 %	7.3 %

The following table presents future minimum lease payments, which includes leases for arrangements with an initial term of more than 12 months (\$000):

Future Years	Operating Leases	Finance Leases	Total
Year 1	\$ 34,062	\$ 2,554	\$ 36,616
Year 2	29,923	2,624	32,547
Year 3	24,830	2,697	27,527
Year 4	19,816	2,771	22,587
Year 5	15,532	2,847	18,379
Thereafter	47,284	13,801	61,085
Total minimum lease payments	\$ 171,447	\$ 27,294	\$ 198,741
Less: amounts representing interest	33,659	6,284	39,943
Present value of total lease liabilities	<u>\$ 137,788</u>	<u>\$ 21,010</u>	<u>\$ 158,798</u>

From time-to-time, the Company enters into commercial agreements with our customers that include advance payments from our customers, the cash flow from which the Company uses to fund our capital expansion. The Company determines at the inception or modification of the contract if the arrangement is, or contains, a lease, which exists when the contract conveys the right to control the use of identified property or equipment for a period of time in exchange for consideration. In determining if a contract contains a lease, the Company evaluates whether the contract, either explicitly or implicitly, is for the use of an identified asset and whether the customer has the right to direct the use of, and obtain substantially all of the economic benefit from, the identified asset.

The Company entered into a commercial agreement with one of our customers to produce certain engineered materials products within the Compound Semiconductors segment. We received payments of \$23 million and \$8 million during the years ended June 30, 2022 and 2021, respectively, which the Company used to partially fund the purchase of plant and equipment, which is recorded as a contract liability. See Note 4. Revenue from Contracts with Customers. We determined the contractual rights and obligations in the commercial agreement provide us with the substantive right to substitute alternative assets throughout the period of use and therefore the commercial agreement does not contain a lease under ASC 842.

Note 13. Share-Based Compensation

The Company's Board of Directors amended the II-VI Incorporated 2018 Omnibus Incentive Plan, which was approved by the shareholders at the Annual Meeting in November 2018. The Amended Omnibus Plan (the "Plan") was approved at the annual meeting in November 2020. The Plan provides for the grant of non-qualified stock options, stock appreciation rights, restricted shares, restricted share units, deferred shares, performance shares and performance share units to employees, officers and directors of the Company. The maximum number of shares of the Company's common stock authorized for issuance under the Plan is limited to 9,550,000 shares of common stock, not including any remaining shares forfeited under the predecessor plans that may be rolled into the Plan. The Plan has vesting provisions predicated upon the death, retirement or disability of the grantee.

As of June 30, 2022, there were approximately 7 million shares available to be issued under the Plan, including forfeited shares from predecessor plans.

The Company records share-based compensation expense for these awards, which requires the recognition of the grant-date fair value of share-based compensation in net earnings. The Company recognizes the share-based compensation expense over the requisite service period of the individual grantees, which generally equals the vesting period. The Company accounts for cash-based stock appreciation rights, cash-based restricted share units and cash-based performance share units as liability awards, in accordance with U.S. GAAP.

Share-based compensation expense for the fiscal years ended June 30, 2022, 2021 and 2020 is as follows \$000:

Year Ended June 30,	2022	2021	2020
Stock Options and Cash-Based Stock Appreciation Rights	\$ 3,218	\$ 10,626	\$ 11,893
Restricted Share Awards, Restricted Share Units, and Cash-Based Restricted Share Units	56,365	47,060	49,957
Performance Share Units and Cash Based Performance Share Units	10,077	16,640	11,977
	<u>\$ 69,660</u>	<u>\$ 74,326</u>	<u>\$ 73,827</u>

Stock Options and Cash-Based Stock Appreciation Rights:

The Company utilized the Black-Scholes valuation model for estimating the fair value of stock options and cash-based stock appreciation rights. During the fiscal years ended June 30, 2022 and June 30, 2021, no stock options were issued. During fiscal year ended June 30, 2020, the weighted-average fair value of options granted under the Plan was \$14.79 per option, using the following assumptions:

Year Ended June 30,	2020
Risk-free interest rate	1.50 %
Expected volatility	39 %
Expected life of options	6.91 years
Dividend yield	None

The risk-free interest rate is derived from the average U.S. Treasury Note rate during the period, which approximates the rate in effect at the time of grant related to the expected life of the options. The risk-free interest rate shown above is the weighted average rate for all options granted during the fiscal year. Expected volatility is based on the historical volatility of the Company's common stock over the period commensurate with the expected life of the options. The expected life calculation is based on the observed time to post-vesting exercise and/or forfeitures of options by our employees. The dividend yield of zero is based on the fact that the Company has never paid cash dividends and has no current intention to pay cash dividends in the future.

Stock option and cash-based stock appreciation rights activity during the fiscal year ended June 30, 2022 was as follows:

	Stock Options		Cash-Based Stock Appreciation Rights	
	Number of Shares	Weighted Average Exercise Price	Number of Rights	Weighted Average Exercise Price
Outstanding - July 1, 2021	2,642,634	\$ 29.26	145,334	\$ 33.80
Exercised	(188,015)	\$ 26.78	(14,054)	\$ 37.00
Forfeited and Expired	(21,729)	\$ 30.78	(3,718)	\$ 35.80
Outstanding - June 30, 2022	2,432,890	\$ 29.41	127,562	\$ 33.39
Exercisable - June 30, 2022	1,990,721	\$ 27.61	86,211	\$ 30.86

As of June 30, 2022, 2021 and 2020, the aggregate intrinsic value of stock options and cash-based stock appreciation rights outstanding and exercisable was \$48 million, \$88 million and \$80 million, respectively. Aggregate intrinsic value represents the total pretax intrinsic value (the difference between the Company's closing stock price on the last trading day of the year ended June 30, and the option's exercise price, multiplied by the number of in-the-money options) that would have been received by the option holders had all option holders exercised their options on June 30, 2022. This amount varies based on the fair market value of the Company's stock. The total intrinsic value of stock options and cash-based stock appreciation rights exercised during the fiscal years ended June 30, 2022, 2021, and 2020 was \$8 million, \$49 million, and \$20 million, respectively. As of June 30, 2022, total unrecognized compensation cost related to non-vested stock options and cash-based stock appreciation rights was \$3 million. This cost is expected to be recognized over a weighted-average period of approximately 1 year.

Outstanding and exercisable stock options at June 30, 2022 were as follows:

Range of Exercise Prices	Stock Options and Cash-Based Stock Appreciation Rights Outstanding			Stock Options and Cash-Based Stock Appreciation Rights Exercisable		
	Number of Shares or Rights	Weighted Average Remaining Contractual Term (Years)	Weighted Average Exercise Price	Number of Shares or Rights	Weighted Average Remaining Contractual Term (Years)	Weighted Average Exercise Price
\$13.34 - \$18.07	549,192	2.62	\$ 16.14	549,192	2.62	\$ 16.14
\$18.07 - \$24.35	596,310	3.23	\$ 20.96	590,046	3.19	\$ 20.87
\$24.35 - \$35.39	490,512	5.72	\$ 33.29	401,104	5.33	\$ 34.10
\$35.39 - \$36.90	541,065	7.19	\$ 36.46	254,550	7.14	\$ 36.45
\$36.90 - \$49.90	383,373	6.08	\$ 47.94	282,040	6.02	\$ 47.85
	2,560,452	4.84	\$ 29.60	2,076,932	4.32	\$ 27.74

Restricted Share Awards, Restricted Share Units, and Cash-Based Restricted Share Units:

Restricted share awards, restricted share units, and cash-based restricted share units compensation expense was calculated based on the number of shares or units expected to be earned by the grantee multiplied by the stock price at the date of grant (for restricted share awards and restricted share units) or the stock price at the period end date (for cash-based restricted share units), and is being recognized over the vesting period. Generally, the restricted share awards, restricted share units, and cash-based restricted share units have a three-year tranche vesting provision. There were no restricted share awards issued in the fiscal year ending June 30, 2022, and all previous restricted share awards have been amortized in full.

Restricted share unit, and cash-based restricted share unit activity during the fiscal year ended June 30, 2022, was as follows:

	Restricted Share Units			Cash-Based Restricted Share Units		
	Number of Units	Weighted Average Grant Date Fair Value		Number of Units	Weighted Average Grant Date Fair Value	
Nonvested - July 1, 2021	2,326,172	\$ 43.67		45,873	\$ 38.75	
Granted	849,467	\$ 63.63		3,538	\$ 63.60	
Vested	(1,117,600)	\$ 40.67		(26,589)	\$ 40.48	
Forfeited	(159,861)	\$ 44.87		(2,344)	\$ 45.29	
Nonvested - June 30, 2022	1,898,178	\$ 54.24		20,478	\$ 40.05	

As of June 30, 2022, total unrecognized compensation cost related to non-vested, restricted share unit and cash-based restricted share units was \$58 million. This cost is expected to be recognized over a weighted-average period of approximately two years. The restricted share unit compensation expense was calculated based on the number of shares expected to be earned, multiplied by the stock price at the date of grant, and is being recognized over the vesting period. The cash-based restricted share unit compensation expense was calculated based on the number of units expected to be earned, multiplied by the stock price at the period-end date, and is being recognized over the vesting period. The total fair value of the restricted share awards, restricted share units, and cash-based restricted share units granted during the years ended June 30, 2022, 2021 and 2020, was \$54 million, \$59 million and \$11 million, respectively. The total fair value of restricted share awards, restricted share units and cash-based restricted share units vested was \$67 million, \$69 million and \$75 million during fiscal years 2022, 2021 and 2020, respectively.

Performance Share Units and Cash-Based Performance Share Units:

The Compensation Committee of the Board of Directors of the Company has granted certain executive officers and employees performance share units and cash-based performance share units under the Plan. As of June 30, 2022, the Company had outstanding grants covering performance periods ranging from 12 to 36 months. These grants are intended to provide continuing emphasis on specified financial performance goals that the Company considers important contributors to the

creation of long-term shareholder value. These grants are payable only if the Company achieves specified levels of financial performance during the performance periods.

For our relative Total Shareholder Return ("TSR") performance-based units, which are based on market performance of our stock as compared to the S&P Composite 1500 – Electronic Equipment, Instruments & Components Index, the compensation cost is recognized over the performance period on a straight-line basis, because the grants vest only at the end of the measurement period and the probability of actual shares expected to be earned is considered in the grant date valuation. As a result, the expense is not adjusted to reflect the actual shares earned. We estimate the fair value of the TSR performance-based units using the Monte-Carlo simulation model.

The performance share unit compensation expense was calculated based on the number of shares expected to be earned, multiplied by the stock price at the date of grant, and is being recognized over the vesting period. The cash-based performance share unit compensation expense was calculated based on the number of units expected to be earned, multiplied by the stock price at the period-end date, and is being recognized over the vesting period. Performance share unit and cash-based performance share unit activity relating to the Plan during the year ended June 30, 2022, was as follows:

	Performance Share Units		Cash-Based Performance Share Units	
	Number of Units	Weighted Average Grant Date Fair Value	Number of Units	Weighted Average Grant Date Fair Value
Nonvested - July 1, 2021	518,309	\$ 45.28	27,724	\$ 39.43
Granted	167,764	\$ 83.03	—	\$ —
Vested	(200,611)	\$ 62.69	(23,514)	\$ 49.90
Forfeited	(16,407)	\$ 53.49	—	\$ —
Performance Adjustments	122,530	\$ —	13,914	\$ 49.90
Nonvested - June 30, 2022	591,585	\$ 40.48	18,124	\$ 33.88

As of June 30, 2022, total unrecognized compensation cost related to non-vested performance share units and cash-based performance share units was \$10 million. This cost is expected to be recognized over a weighted-average period of approximately 1.75 years. The total fair value of the performance share units and cash-based performance share units granted during the fiscal years ended June 30, 2022, 2021 and 2020 was \$14 million, \$14 million and \$15 million, respectively. The total fair value of performance share units and cash-based performance share units vested during the fiscal years ended June 30, 2022, 2021 and 2020 was \$11 million, \$9 million and \$6 million, respectively. The performance adjustments relate to grants that exceeded the performance targets when vested during FY22, including the final number of shares issued, which were 200% of the target units based on actual results during the three-year performance period.

Note 14. Segment and Geographic Reporting

The Company reports its business segments using the "management approach" model for segment reporting. This means that the Company determines its reportable business segments based on the way the chief operating decision maker organizes business segments within the Company for making operating decisions and assessing performance.

The Company reports its financial results in two segments, and the Company's chief operating decision maker receives and reviews financial information based on these segments. The Company evaluates business segment performance based upon segment operating income, which is defined as earnings before income taxes, interest and other income or expense.

The Compound Semiconductors segment has locations in the United States, Singapore, China, Germany, Switzerland, Japan, Belgium, the United Kingdom, Italy, South Korea, the Philippines, Vietnam, Sweden, and Taiwan. This segment address all of II-VI's seven end markets, namely: communications, industrial, aerospace & defense, consumer electronics, semiconductor capital equipment, life sciences and automotive. This segment designs, manufactures and markets the following products: (i) optical and electro-optical components and materials used primarily in CO₂ lasers, fiber-lasers and direct diode lasers for materials processing applications; (ii) infrared optical components and high-precision optical assemblies for aerospace and defense, medical and commercial laser imaging applications; (iii) semiconductor lasers and detectors for optical interconnects and sensing applications; (iv) engineered materials for thermoelectric, ceramics and silicon carbide for a wide range of applications; and (v) compound semiconductor epitaxial wafers for applications in optical and wireless communication.

The Photonic Solutions segment has locations in the United States, China, Vietnam, Germany, Japan, the United Kingdom, Italy, Malaysia, Australia, and Hong Kong. This segment manufactures (i) transceivers for data centers and telecom optical networks; (ii) pump lasers, optical amplifiers, wavelength selective switches and advanced components for telecom networks; (iii) crystal materials, optics, lasers and optoelectronic modules for a wide range of applications, including in optical communications, life sciences, and consumer electronics markets.

The accounting policies are consistent across both of the segments. To the extent possible, the Company's corporate expenses are allocated to the segments. The Company evaluates segment performance based upon reported segment operating income, which is defined as earnings from continuing operations before income taxes, interest and other income or expense. Unallocated and Other include eliminating inter-segment sales and transfers as well as transaction costs related to the Coherent acquisition in the fiscal years ended June 30, 2022 and June 30, 2021. In the fiscal year ended June 30, 2020, it included transaction costs related to the Finisar acquisition.

The following tables summarize selected financial information of the Company's operations by segment:

	Photonic Solutions	Compound Semiconductors	Unallocated & Other	Total
<i>(\$000)</i>				
2022				
Revenues	\$ 2,226,196	\$ 1,090,420	\$ —	\$ 3,316,616
Inter-segment revenues	36,898	329,342	(366,240)	—
Operating income (loss)	230,094	220,070	(35,870)	414,294
Interest expense	—	—	—	(121,254)
Other income, net	—	—	—	(11,233)
Income taxes	—	—	—	(47,048)
Net earnings	—	—	—	234,759
Depreciation and amortization	172,851	113,928	—	286,779
Expenditures for property, plant & equipment	89,818	224,514	—	314,332
Segment assets	4,875,053	2,969,793	—	7,844,846
Goodwill	1,048,743	237,016	—	1,285,759
	Photonic Solutions	Compound Semiconductors	Unallocated & Other	Total
<i>(\$000)</i>				
2021				
Revenues	\$ 2,038,284	\$ 1,067,607	\$ —	\$ 3,105,891
Inter-segment revenues	35,358	244,407	(279,765)	—
Operating income (loss)	207,652	221,239	(26,772)	402,119
Interest expense	—	—	—	(59,899)
Other income, net	—	—	—	10,370
Income taxes	—	—	—	(55,038)
Net loss	—	—	—	297,552
Depreciation and amortization	161,208	108,861	—	270,069
Expenditures for property, plant & equipment	87,304	59,033	—	146,337
Segment assets	4,231,289	2,281,361	—	6,512,650
Goodwill	1,053,028	243,699	—	1,296,727

	Photonic Solutions	Compound Semiconductors	Unallocated & Other	Total
(\$000)				
2020				
Revenues	\$ 1,536,790	\$ 821,230	\$ 22,051	\$ 2,380,071
Inter-segment revenues	31,515	164,884	(196,399)	—
Operating income	49,930	62,279	(72,730)	39,479
Interest expense	—	—	—	(89,409)
Other income, net	—	—	—	(13,998)
Income taxes	—	—	—	(3,101)
Net earnings	—	—	—	(67,029)
Depreciation and amortization	112,203	104,936	3,743	220,882
Expenditures for property, plant & equipment	45,795	88,318	2,764	136,877
Segment Assets	3,502,467	1,732,247	—	5,234,714
Goodwill	1,052,494	186,515	—	1,239,009

Geographic information for revenues by location of the customer's headquarters, were as follows:

	Revenues		
Year Ended June 30,	2022	2021	2020
(\$000)			
North America	\$ 1,771,385	\$ 1,560,254	\$ 1,085,146
Europe	623,157	567,703	437,908
China	614,393	680,479	483,393
Japan	196,512	203,655	183,587
Rest of World	111,169	93,800	190,038
Total	\$ 3,316,616	\$ 3,105,891	\$ 2,380,071

Geographic information for long-lived assets by country, which include property, plant and equipment, net of related depreciation, and certain other long-term assets, were as follows:

June 30, (\$000)	Long-Lived Assets	
	2022	2021
United States	\$ 902,163	\$ 737,151
Non-United States		
China	394,056	402,987
United Kingdom	63,898	60,090
Malaysia	64,807	53,187
Switzerland	40,540	37,121
Sweden	28,030	27,374
Germany	14,521	16,703
Australia	10,478	13,627
Vietnam	16,844	10,246
Philippines	7,375	7,890
Taiwan	7,025	6,532
Korea	4,325	4,595
Hong Kong	1,645	2,104
Other	2,350	1,916
Total Non-United States	\$ 655,894	\$ 644,372
	<u>\$ 1,558,057</u>	<u>\$ 1,381,523</u>

Note 15. Fair Value of Financial Instruments

The FASB defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous markets for the asset and liability in an orderly transaction between market participants at the measurement date. The Company estimates fair value of its financial instruments utilizing an established three-level hierarchy in accordance with U.S. GAAP. The hierarchy is based upon the transparency of inputs to the valuation of an asset or liability as of the measurement date as follows:

- Level 1 – Valuation is based upon unadjusted quoted prices for identical assets or liabilities in active markets.
- Level 2 – Valuation is based upon quoted prices for similar assets and liabilities in active markets, or other inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instruments.
- Level 3 – Valuation is based upon other unobservable inputs that are significant to the fair value measurements.

The classification of fair value measurements within the hierarchy is based upon the lowest level of input that is significant to the measurement.

The Company entered into an interest rate swap with a notional amount of \$1,075 million to limit the exposure to its variable interest rate debt by effectively converting it to a fixed interest rate. The Company receives payments based on the one-month LIBOR and makes payments based on a fixed rate of 1.52%. The Company receives payments with a floor of 0.00%. The interest rate swap agreement has an effective date of November 24, 2019, with an expiration date of September 24, 2024. The initial notional amount of the interest rate swap decreased to \$825 million in June 2022 and will remain at that amount through the expiration date. The Company designated this instrument as a cash flow hedge and deemed the hedge relationship effective at inception of the contract. The fair value of the interest rate swap of \$27 million is recognized in the Consolidated Balance Sheets within prepaid and other current assets and other assets as of June 30, 2022. Changes in fair value are recorded within accumulated other comprehensive income (loss) on the Consolidated Balance Sheets and reclassified into the Consolidated Statements of Earnings (Loss) as interest expense in the period in which the underlying transaction affects earnings. Cash flows from hedging activities are reported in the Consolidated Statements of Cash Flows in the same classification as the hedged item, generally as a component of cash flows from operations. The fair value of the interest rate swap is determined using widely accepted valuation techniques and reflects the contractual terms of the interest rate swap including the period to maturity, and while there are no quoted prices in active markets, it uses observable market-based inputs, including interest rate curves. The fair value analysis also considers a credit valuation adjustment to reflect nonperformance risk of both the Company and the single counterparty. The interest rate swap is classified as a Level 2 item within the fair value hierarchy.

On February 23, 2022, the Company entered into an interest rate cap ("the Cap") with an effective date of July 1, 2023. The Cap manages the Company's exposure to interest rate movements on a portion of the Company's floating rate debt. The Cap provides the Company with the right to receive payment if one-month LIBOR exceeds 1.85%. Beginning in July 2023, the Company will begin to pay a fixed monthly premium based on an annual rate of 0.853% for the Cap. The Cap will carry a notional amount ranging from \$500 million to \$1,500 million. The fair value of the interest rate cap of \$18 million is recognized in the Consolidated Balance Sheets within other assets as of June 30, 2022.

The Cap is designed to mirror the terms of the Company's Credit Agreement as of the effective date, or its direct replacement. The Company designated the Cap as a cash flow hedge of the variability of the LIBOR-based interest payments on the Term Loans. Every period over the life of the hedging relationship, the entire change in fair value related to the hedging instrument will first be recorded within accumulated other comprehensive income (loss). Amounts accumulated in accumulated other comprehensive income (loss) will be reclassified into interest expense in the same period or periods in which interest expense is recognized on the Credit Agreement, or its direct replacement. The fair value of the Cap is determined using widely accepted valuation techniques and reflects the contractual terms of the Cap including the period to maturity, and while there are no quoted prices in active markets, it uses observable market-based inputs, including interest rate curves. The fair value analysis also considers a credit valuation adjustment to reflect nonperformance risk of both the Company and the single counterparty. The Cap is classified as a Level 2 item within the fair value hierarchy.

The Company estimated the fair value of the II-VI Convertible Notes based on quoted market prices as of the last trading day prior to June 30, 2022; however, the II-VI Convertible Notes have only a limited trading volume and as such this fair value estimate is not necessarily the value at which the II-VI Convertible Notes could be retired or transferred. The Company concluded that this fair value measurement should be categorized within Level 2. The carrying value of the II-VI Convertible Notes is net of unamortized discount and issuance costs. See Note 8. Debt for details on the Company's debt facilities.

The Company estimated the fair value of the Senior Notes based on quoted market prices as of the last trading day prior to June 30, 2022; however, the Senior Notes have only a limited trading volume and as such this fair value estimate is not necessarily the value at which the Senior Notes could be retired or transferred. The Company concluded that this fair value measurement should be categorized within Level 2. The carrying value of the Senior Notes is net of unamortized discount and issuance costs. See Note 8. Debt for details on the Company's debt facilities.

The fair value and carrying value of the II-VI Convertible Notes and Senior Notes were as follows at June 30, 2022 (\$000):

	Fair Value		Carrying Value	
II-VI Convertible Notes	\$	382,601	\$	341,162
Senior Notes	\$	865,527	\$	982,297

The fair values of cash and cash equivalents are considered Level 1 among the fair value hierarchy and approximate fair value because of the short-term maturity of those instruments. The Company's borrowings including its lease obligations and the Senior Notes, excluding the II-VI Convertible Notes are considered Level 2 among the fair value hierarchy and their principal amounts approximate fair value.

The Company, from time to time, purchases foreign currency forward exchange contracts, that permit it to sell specified amounts of these foreign currencies expected to be received from its export sales, for pre-established U.S. dollar amounts at specified dates. These contracts are entered into to limit transactional exposure to changes in currency exchange rates of export sales transactions in which settlement will occur in future periods and which otherwise would expose the Company, on the basis of its aggregate net cash flows in respective currencies, to foreign currency risk. At June 30, 2022, the Company had foreign currency forward contracts recorded at fair value. The fair values of these instruments were measured using valuations based upon quoted prices for similar assets and liabilities in active markets (Level 2) and are valued by reference to similar financial instruments, adjusted for credit risk and restrictions and other terms specific to the contracts. Realized losses related to these contracts for the year ended June 30, 2022 were \$27 million, and were included in other expense (income), net in the Consolidated Statements of Earnings (Loss). For the years ended June 30, 2021 and June 30, 2020, the realized losses related to foreign currency forward contracts were not material.

Note 16. Employee Benefit Plans

Eligible U.S. employees of the Company participate in a profit sharing retirement plan. Contributions accrued for the plan are made at the discretion of the Company's board of directors and were \$2 million, \$2 million, and \$6 million for the years ended June 30, 2022, 2021 and 2020, respectively.

Switzerland Defined Benefit Plan

The Company maintains a pension plan covering employees of our Swiss subsidiary (the "Swiss Plan"). Employer and employee contributions are made to the Swiss Plan based on various percentages of salary and wages that vary according to employee age and other factors. Employer contributions to the Swiss Plan for years ended June 30, 2022 and 2021 were \$2 million and \$4 million, respectively. Net periodic pension cost is not material for any year presented.

The underfunded pension liability was \$4 million and \$25 million as of June 30, 2022 and 2021, respectively. The pension adjustment amount recognized in accumulated other comprehensive income (loss) was a \$16 million increase and a \$2 million increase for the fiscal years ended June 30, 2022 and 2021, respectively. The accumulated benefit obligation was \$81 million as of June 30, 2022, compared to \$90 million as of June 30, 2021.

Estimated future benefit payments under the Swiss Plan are estimated to be as follows:

Year Ending June 30,

<i>(\$000)</i>		
2023	\$	6,700
2024		5,300
2025		6,700
2026		8,900
2027		4,600
Next five years		41,200

Note 17. Other Accrued Liabilities

The components of other accrued liabilities were as follows:

June 30,	2022	2021
<i>(\$000)</i>		
Contract liabilities	\$ 22,960	\$ 13,926
Warranty reserves	17,738	21,868
Accrued interest	38,872	428
Other accrued liabilities	120,260	109,687
	<u>\$ 199,830</u>	<u>\$ 145,909</u>

Note 18. Commitments and Contingencies

The Company has purchase commitments for materials and supplies as part of the ordinary conduct of business. A portion of the commitments are long-term and are based on minimum purchase requirements. Certain short-term raw material purchase commitments have a variable price component which is based on market pricing at the time of purchase. Due to the proprietary nature of some of the Company's materials and processes, certain contracts may contain liquidated damage provisions for early termination. The Company does not believe that a significant amount of liquidated damages are reasonably likely to be incurred under these commitments based upon historical experience and current expectations. Total future purchase commitments held by II-VI as of June 30, 2022 were \$491 million in fiscal 2023 and \$213 million thereafter.

Note 19. Share Repurchase Programs

In August 2014, the Company's Board of Directors authorized the Company to purchase up to \$50 million of its common stock through a share repurchase program (the "Program") that calls for shares to be purchased in the open market or in private transactions from time to time. The Program has no expiration and may be suspended or discontinued at any time. Shares purchased by the Company are retained as treasury stock and available for general corporate purposes. The Company did not repurchase any shares pursuant to this Program during the fiscal years ended June 30, 2022 or June 30, 2021. As of June 30, 2022, the Company has cumulatively purchased 1,416,587 shares of II-VI common stock pursuant to the Program for approximately \$22 million.

Note 20. Accumulated Other Comprehensive Income (Loss)

The changes in accumulated other comprehensive income (loss) ("AOCI") by component, net of tax, for the years ended June 30, 2022, 2021, and 2020 were as follows (\$000):

	Foreign Currency Translation Adjustment	Interest Rate Swap	Interest Rate Cap	Defined Benefit Pension Plan	Total Accumulated Other Comprehensive Income (Loss)
AOCI - June 30, 2019	<u>\$ (15,627)</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ (8,594)</u>	<u>\$ (24,221)</u>
Other comprehensive loss before reclassifications	(15,969)	(46,067)	—	(3,528)	(65,564)
Amounts reclassified from AOCI	—	1,982	—	420	2,402
Net current-period other comprehensive loss	(15,969)	(44,085)	—	(3,108)	(63,162)
AOCI - June 30, 2020	<u>\$ (31,596)</u>	<u>\$ (44,085)</u>	<u>\$ —</u>	<u>\$ (11,702)</u>	<u>\$ (87,383)</u>
Other comprehensive income (loss) before reclassifications	86,991	(2,687)	—	1,709	86,013
Amounts reclassified from AOCI	—	14,999	—	638	15,637
Net current-period other comprehensive income	86,991	12,312	—	2,347	101,650
AOCI - June 30, 2021	<u>\$ 55,395</u>	<u>\$ (31,773)</u>	<u>\$ —</u>	<u>\$ (9,355)</u>	<u>\$ 14,267</u>
Other comprehensive income (loss) before reclassifications	(89,967)	29,711	14,306	15,300	(30,650)
Amounts reclassified from AOCI	—	13,797	—	419	14,216
Net current-period other comprehensive income (loss)	(89,967)	43,508	14,306	15,719	(16,434)
AOCI - June 30, 2022	<u>\$ (34,572)</u>	<u>\$ 11,735</u>	<u>\$ 14,306</u>	<u>\$ 6,364</u>	<u>\$ (2,167)</u>

SCHEDULE II

II-VI INCORPORATED AND SUBSIDIARIES
VALUATION AND QUALIFYING ACCOUNTS
YEARS ENDED JUNE 30, 2022, 2021, AND 2020
(IN THOUSANDS OF DOLLARS)

	Balance at Beginning of Year	Charged to Expense	Charged to Other Accounts	Deduction from Reserves	Balance at End of Year
YEAR ENDED JUNE 30, 2022:					
Allowance for doubtful accounts	\$ 924	\$ 3,292	\$ —	\$ (10) ⁽³⁾	\$ 4,206
Warranty reserves	\$ 21,868	\$ 7,718	\$ —	\$ (11,848)	\$ 17,738
Deferred tax asset valuation allowance	\$ 53,765	\$ 2,157	\$ (502) ⁽²⁾	\$ —	\$ 55,420
YEAR ENDED JUNE 30, 2021:					
Allowance for doubtful accounts	\$ 1,698	\$ 301	\$ —	\$ (1,075) ⁽³⁾	\$ 924
Warranty reserves	\$ 27,620	\$ 2,134	\$ —	\$ (7,886)	\$ 21,868
Deferred tax asset valuation allowance	\$ 54,559	\$ (2,545)	\$ 1,751 ⁽¹⁾	\$ —	\$ 53,765
YEAR ENDED JUNE 30, 2020:					
Allowance for doubtful accounts	\$ 1,292	\$ 956	\$ —	\$ (550) ⁽³⁾	\$ 1,698
Warranty reserves	\$ 4,478	\$ 11,507	\$ 37,453	\$ (25,818)	\$ 27,620
Deferred tax asset valuation allowance	\$ 20,190	\$ (2,186)	\$ 36,555	\$ —	\$ 54,559

(1) Related to amounts assumed from the Finisar acquisition.

(2) Primarily related to currency translation adjustments.

(3) Primarily relates to write-offs of accounts receivable.

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

Item 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

The Company's management evaluated, with the participation of the Company's Chief Executive Officer, and the Company's Chief Financial Officer and Treasurer, the effectiveness of the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of the end of the period covered by this Annual Report on Form 10-K. The Company's disclosure controls were designed to provide reasonable assurance that information required to be disclosed in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. It should be noted that the design of any system of controls is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions, regardless of how remote. However, the controls have been designed to provide reasonable assurance of achieving the controls' stated goals. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that, as of June 30, 2022, the Company's disclosure controls and procedures are effective.

Management's Report on Internal Control Over Financial Reporting

Refer to Management's Report on Internal Control Over Financial Reporting included in Item 8 of this Annual Report on Form 10-K.

Report of the Registered Public Accounting Firm

The report of Ernst & Young LLP, an independent registered public accounting firm, with respect to our internal control over financial reporting is included in Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

There have been no changes in the Company's internal controls over financial reporting that occurred during our most recent quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. OTHER INFORMATION

None.

Item 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

Item 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

The information set forth above in Part I of this Annual Report on Form 10-K under the caption "Executive Officers of the Registrant" is incorporated herein by reference. The other information required by this item, to the extent applicable, is incorporated herein by reference to the information set forth under the captions "Election of Directors" and if applicable, "Delinquent Section 16(a) Reports" in the Company's definitive proxy statement for the 2022 Annual Meeting of Shareholders to be filed pursuant to Regulation 14A of the Exchange Act (the "Proxy Statement").

Audit Committee Financial Expert

The information as to the Audit Committee and the Audit Committee Financial Expert is incorporated herein by reference to the information set forth in the Company's Proxy Statement.

Code of Ethics

The Company has adopted its Code of Business Conduct and Ethics for all of its employees. The Code of Business Conduct and Ethics can be found on the Company's Internet web site at www.ii-vi.com under "Investors Information – Corporate Governance Documents." The Company will promptly disclose on its web site (i) any amendments or waivers with respect to a director's or executive officer's compliance with the Code of Business Conducts and Ethics and (ii) any amendments or waivers with respect to any provision of the Code of Ethics. Any person may also obtain a copy of the Code of Business Conduct and Ethics without charge by submitting their request to the Chief Financial Officer and Treasurer of II-VI Incorporated, 375 Saxonburg Boulevard, Saxonburg, Pennsylvania 16056, or by calling (724) 352-4455.

We intend to satisfy any disclosure requirements under Item 5.05 of Form 8-K regarding an amendment to, or waiver from, a provision of the Code of Business Conduct and Ethics by posting such information on our web site.

The website and information contained on it or incorporated in it are not intended to be incorporated in this Annual Report on Form 10-K or other filings with the SEC.

Item 11. EXECUTIVE COMPENSATION

The information required by this item is incorporated herein by reference to the information set forth under the caption "Director Compensation in Fiscal Year 2022," "Executive Compensation," "Compensation Committee Report" and "Compensation and Risk" in the Company's Proxy Statement.

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this item is incorporated herein by reference to the information set forth under the captions "Equity Compensation Plan Information" and "Security Ownership of Certain Beneficial Owners and Management" in the Company's Proxy Statement.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

The information required by this item is incorporated herein by reference to the information set forth under the caption "Director Independence and Corporate Governance Policies" in the Company's Proxy Statement.

Item 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this item is incorporated herein by reference to the information set forth under the caption "Ratification of the Audit Committee's Selection of Independent Registered Public Accounting Firm" in the Company's Proxy Statement.

PART IV

Item 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) (1) Financial Statements

The financial statements are set forth under Item 8 of this Annual Report on Form 10-K.

(2) Schedules

Schedule II – Valuation and Qualifying Accounts for each of the three fiscal years in the period ended June 30, 2022 is set forth under Item 8 of this Annual Report on Form 10-K.

Financial statements, financial statement schedules and exhibits not listed have been omitted where the required information is included in the Consolidated Financial Statements or notes thereto, or is not applicable or required.

Exhibit No.	Description	Location
2.01	<u>Agreement and Plan of Merger, dated as of November 8, 2018, by and among II-VI Incorporated, Mutation Merger Sub Inc. and Finisar Corporation.</u>	Incorporated herein by reference to Exhibit 2.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on November 9, 2018.
2.02	<u>Agreement and Plan of Merger, dated as of March 25, 2021, by and among II-VI Incorporated, Watson Merger Sub Inc. and Coherent, Inc.</u>	Incorporated herein by reference to Exhibit 2.1 to II-VI's Current Report on Form 8-K (File No. 001-39375) filed on March 25, 2021.
3.01	<u>Amended and Restated Articles of Incorporation of II-VI Incorporated.</u>	Incorporated herein by reference to Exhibit 3.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on November 8, 2011.
3.02	<u>Amended and Restated By-Laws of II-VI Incorporated as amended and restated effective November 19, 2021.</u>	Incorporated herein by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-39375) filed on November 24, 2021.
3.03	<u>Statement with Respect to Shares, filed with the Pennsylvania Department of State Corporations Bureau and effective July 6, 2020.</u>	Incorporated herein by reference to Exhibit 3.03 to II-VI's Annual Report on Form 10-K (File No. 001-39375) for the fiscal year ended June 30, 2020.
3.04	<u>Statement with Respect to Shares, filed with the Pennsylvania Department of State Corporations Bureau and effective March 30, 2021.</u>	Incorporated herein by reference to Exhibit 3.1 to II-VI's Current Report on Form 8-K (File No. 001-39375) filed on March 31, 2021.
4.01	<u>Indenture, dated as of August 29, 2017, by and between II-IV Incorporated and U.S. Bank, National Association, as Trustee</u>	Incorporated herein by reference to Exhibit 4.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on November 14, 2017.
4.02	<u>Form of 0.25% Convertible Senior Notes due 2022.</u>	Included in Exhibit 4.01.
4.03	<u>Description of II-VI's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934.</u>	Filed herewith.
4.04	Form of 6.00% Series A Mandatory Convertible Preferred Stock Certificate.	Included in Exhibit 3.03.
4.05	<u>Indenture, dated as of December 10, 2021, among the Company, the guarantors party thereto and U.S. Bank National Association, as trustee.</u>	Incorporated herein by reference to Exhibit 4.1 of the Company's Current Report on Form 8-K (File No. 001-39375) filed on December 10, 2021.
4.06	Form of 0.50% Convertible Senior Notes due 2029.	Included in Exhibit 4.05.
4.07	<u>Registration Rights Agreement, dated March 31, 2021, by and between II-VI Incorporated and BCPE Watson (DE) SPV, LP.</u>	Incorporated herein by reference to Exhibit D of the Schedule 13D filed by BCPE Watson (DE) BML, LP on July 11, 2022.
10.01	<u>Credit Agreement, dated as of July 1, 2022, by and among II-VI Incorporated, the lenders and other parties from time to time party thereto and JPMorgan Chase Bank, N.A., as administrative agent.</u>	Incorporated herein by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K (File No. 001-39375) filed on July 1, 2022.
10.02	<u>Amended and Restated Employment Agreement, effective January 26, 2020, by and between II-VI Incorporated and Vincent D. Mattera, Jr. *</u>	Incorporated herein by reference to Exhibit 10.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on January 30, 2020.

10.03	<u>Form of Indemnification Agreement between II-VI Incorporated and its directors and officers</u>	Incorporated herein by reference to Exhibit 10.15 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2018.
10.04	II-VI Incorporated Amended and Restated Employees' Profit-Sharing Plan and Trust Agreement, as amended (P)	Incorporated herein by reference to Exhibit 10.05 to II-VI's Registration Statement on Form S-1 (File No. 33-16389).
10.05	<u>Description of Bonus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.14 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 1996.
10.06	<u>Description of Discretionary Incentive Plan (now known as the Goal/ Results Incentive Program)*</u>	Incorporated herein by reference to Exhibit 10.27 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2009.
10.07	<u>Amended and Restated II-VI Incorporated Deferred Compensation Plan (applicable to periods prior to January 1, 2015)*</u>	Incorporated herein by reference to Exhibit 10.17 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2015.
10.08	<u>Amended and Restated II-VI Incorporated Deferred Compensation Plan (applicable to periods after January 1, 2015)*</u>	Incorporated herein by reference to Exhibit 10.18 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2015.
10.09	<u>Trust Under the II-VI Incorporated Deferred Compensation Plan*</u>	Incorporated herein by reference is Exhibit 10.13 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 1996.
10.12	<u>II-VI Incorporated 2012 Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.01 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on November 5, 2012.
10.13	<u>Form of Nonqualified Stock Option under the II-VI Incorporated 2012 Omnibus Incentive Plan*</u>	Incorporated herein by reference is Exhibit 10.30 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2013.
10.14	<u>II-VI Incorporated Amended and Restated 2012 Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.1 to II-VI's Registration Statement on Form S-8 (File No. 333-199855) filed on November 4, 2014.
10.15	<u>Form of Nonqualified Stock Option Agreement under the II-VI Incorporated Amended and Restated 2012 Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.30 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2013.
10.16	<u>II-VI Incorporated Second Amended and Restated 2012 Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.01 to II-VI's Current Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2015.
10.17	<u>Form of Nonqualified Stock Option Agreement under the II-VI Incorporated Second Amended and Restated Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.03 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended September 30, 2016.

10.18	<u>Form of Restricted Share Award Agreement (3 year) under the II-VI Incorporated Second Amended and Restated 2012 Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.05 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended September 30, 2016.
10.19	<u>Form of Restricted Share Unit Award Agreement under the II-VI Incorporated Second Amended and Restated 2012 Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.07 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended September 30, 2016.
10.20	<u>Form of Performance Share Award Agreement under the II-VI Incorporated Second Amended and Restated 2012 Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.20 to II-VI's Annual Report on Form 10-K (File No. 001-39375) for the fiscal year ended June 30, 2020.
10.21	<u>II-VI Incorporated 2018 Employee Stock Purchase Plan*</u>	Incorporated herein by reference to Exhibit 10.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on November 13, 2018.
10.22	<u>II-VI Incorporated Amended and Restated 2018 Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 99.1 to II-VI's Registration Statement on Form S-8 (File No. 333-249995) filed on November 10, 2020.
10.23	<u>Form of Nonqualified Stock Option Agreement under the II-VI Incorporated 2018 Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.01 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2018.
10.24	<u>Form of Restricted Share Unit Settled In Shares Award Agreement under the II-VI Incorporated 2018 Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.02 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2018.
10.25	<u>Form of Restricted Share Unit Settled In Cash Award Agreement under the II-VI Incorporated 2018 Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.03 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2018.
10.26	<u>Form of Restricted Share Unit Settled In Shares Award Agreement under the II-VI Incorporated 2018 Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.04 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2018.
10.27	<u>Form of Stock Appreciation Rights Agreement under the II-VI Incorporated 2018 Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.05 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2018.
10.28	<u>Form of Performance Share Award Agreement under the II-VI Incorporated 2018 Omnibus Incentive Plan*</u>	Incorporated herein by reference to Exhibit 10.28 to II-VI's Annual Report on Form 10-K (File No. 001-39375) for the fiscal year ended June 30, 2020.
10.29	<u>II-VI Incorporated Executive Severance Plan*</u>	Incorporated herein by reference to Exhibit 10.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on August 22, 2019.
10.30	<u>Form of Participation Agreement for the II-VI Incorporated Executive Severance Plan*</u>	Incorporated herein by reference to Exhibit 10.2 to II-VI's Current Report on Form 8-K (File No. 000-016195) filed on August 22, 2019.
10.31	<u>Form of Performance Share Unit Award Agreement (Cash Flow; Share-Settled)</u>	Incorporated herein by reference to Exhibit 10.31 to the Company's Annual Report on Form 10-K (File No. 001-39375) for the fiscal year ended June 30, 2021.

10.32	Form of Performance Share Unit Award Agreement (Relative TSR; Share-Settled)	Incorporated herein by reference to Exhibit 10.32 to the Company's Annual Report on Form 10-K (File No. 001-39375) for the fiscal year ended June 30, 2021.
10.33	Offer Letter, dated January 13, 2022, from II-VI Incorporated to Ronald Basso*	Incorporated herein by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 001-39375) for the quarter ended March 31, 2022.
10.34	Employment Letter Agreement, dated January 7, 2022, by and between II-VI Incorporated and Mark Sobey*	Filed herewith.
10.35	Coherent, Inc. 2011 Equity Incentive Plan	Incorporated herein by reference to Exhibit 10.1 to the Form S-8 filed by Coherent, Inc. (File No. 333-174019) on May 6, 2011.
10.36	Coherent, Inc. 2011 Equity Incentive Plan - Form of Time-Based RSU Agreement.	Incorporated herein by reference to Exhibit 10.23 to the Annual Report on Form 10-K filed by Coherent, Inc. (File No. 001-33962) for its fiscal year ended October 1, 2011.
10.37	Coherent, Inc. 2011 Equity Incentive Plan - Form of Performance RSU Agreement.	Incorporated herein by reference to Exhibit 10.11 to the Annual Report on Form 10-K filed by Coherent, Inc. (File No. 001-33962) for its fiscal year ended September 28, 2019.
10.38	Coherent, Inc. 2011 Equity Incentive Plan - Form of Global RSU Agreement.	Incorporated herein by reference to Exhibit 10.12 to the Annual Report on Form 10-K filed by Coherent, Inc. (File No. 001-33962) for its fiscal year ended September 29, 2018.
10.39	Coherent, Inc. 2011 Equity Incentive Plan - Form of Global Performance RSU Agreement.	Incorporated herein by reference to Exhibit 10.13 to the Annual Report on Form 10-K filed by Coherent, Inc. (File No. 001-33962) for its fiscal year ended September 28, 2019.
10.40	Coherent, Inc. Equity Incentive Plan	Incorporated herein by reference to Exhibit 99.1 to the Form S-8 filed by Coherent, Inc. (File No. 333-237855) on April 27, 2020.
10.41	Coherent, Inc. Equity Incentive Plan - Form of Global Restricted Stock Unit Agreement.	Incorporated herein by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q filed by Coherent, Inc. (File No. 001-33962) for its quarter ended July 4, 2020.
10.42	Coherent, Inc. Equity Incentive Plan - Form of Performance Restricted Stock Unit Agreement (Incorporated by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q filed by Coherent, Inc. (File No. 001-33962) on August 12, 2020).	Incorporated herein by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q filed by Coherent, Inc. (File No. 001-33962) for its quarter ended July 4, 2020.
10.43	Amended and Restated Employment Agreement, effective August 23, 2022, by and between II-VI Incorporated and Vincent D. Mattera, Jr.	Incorporated herein by reference to Exhibit 10.1 to II-VI's Current Report on Form 8-K (File No. 001-39375) filed on August 23, 2022
21.01	List of Subsidiaries of II-VI Incorporated	Filed herewith.
23.01	Consent of Ernst & Young LLP	Filed herewith.

31.01	<u>Certification of the Chief Executive Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended, and Section 302 of the Sarbanes-Oxley Act of 2002</u>	Filed herewith.
31.02	<u>Certification of the Chief Financial Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended, and Section 302 of the Sarbanes-Oxley Act of 2002</u>	Filed herewith.
32.01	<u>Certification of the Chief Executive Officer pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. § 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002</u>	Filed herewith.
32.02	<u>Certification of the Chief Financial Officer pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. § 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002</u>	Filed herewith.
101	Interactive Data File	
(101.INS)	Inline XBRL Instance Document	Filed herewith.
(101.SCH)	Inline XBRL Taxonomy Extension Schema Document	Filed herewith.
(101.CAL)	Inline XBRL Taxonomy Extension Calculation Linkbase Document	Filed herewith.
(101.DEF)	Inline XBRL Taxonomy Definition Linkbase	Filed herewith.
(101.LAB)	Inline XBRL Taxonomy Extension Label Linkbase Document	Filed herewith.
(101.PRE)	Inline XBRL Taxonomy Extension Presentation Linkbase Document	Filed herewith.
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).	Filed herewith.

* Denotes management contract or compensatory plan, contract or arrangement.

(P) Denotes filed via paper copy.

The Registrant will furnish to the Commission upon request copies of any instruments not filed herewith which authorize the issuance of long-term obligations of the Registrant not in excess of 10% of the Registrant's total assets on a consolidated basis.

Item 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

II-VI INCORPORATED

Date: August 29, 2022

By: /s/ Vincent D. Mattera Jr.

Vincent D. Mattera Jr.
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Date: August 29, 2022

Principal Executive Officer:

By: /s/ Vincent D. Mattera Jr.
Vincent D. Mattera Jr.
Chief Executive Officer and
Chairman of the Board

Date: August 29, 2022

Principal Financial and Accounting Officer:

By: /s/ Mary Jane Raymond
Mary Jane Raymond
Chief Financial Officer and Treasurer

Date: August 29, 2022

By: /s/ Francis J. Kramer
Francis J. Kramer
Chairman Emeritus of the Board

Date: August 29, 2022

By: /s/ Joseph J. Corasanti
Joseph J. Corasanti
Director

Date: August 29, 2022

By: /s/ Howard H. Xia
Howard H. Xia
Director

Date: August 29, 2022

By: /s/ Shaker Sadasivam
Shaker Sadasivam
Director

Date: August 29, 2022

By: /s/ Enrico Digirolamo
Enrico Digirolamo
Director

Date: August 29, 2022

By: /s/ Michael L. Dreyer
Michael L. Dreyer
Director

Date: August 29, 2022

By: /s/ Patricia Hatter
Patricia Hatter
Director

Date: August 29, 2022

By: /s/ David L. Motley
David L. Motley
Director

Date: August 29, 2022

By: /s/ Stephen Pagliuca
Stephen Pagliuca
Director

Date: August 29, 2022

By: /s/ Lisa Neal-Graves
Lisa Neal-Graves
Director

Date: August 29, 2022

By: /s/ Stephen A. Skaggs
Stephen A. Skaggs
Director

Date: August 29, 2022

By: /s/ Sandeep S. Vij
Sandeep S. Vij
Director